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What Matters for an ERC Starting Grant?

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The Importance of an ERC Starting Grant

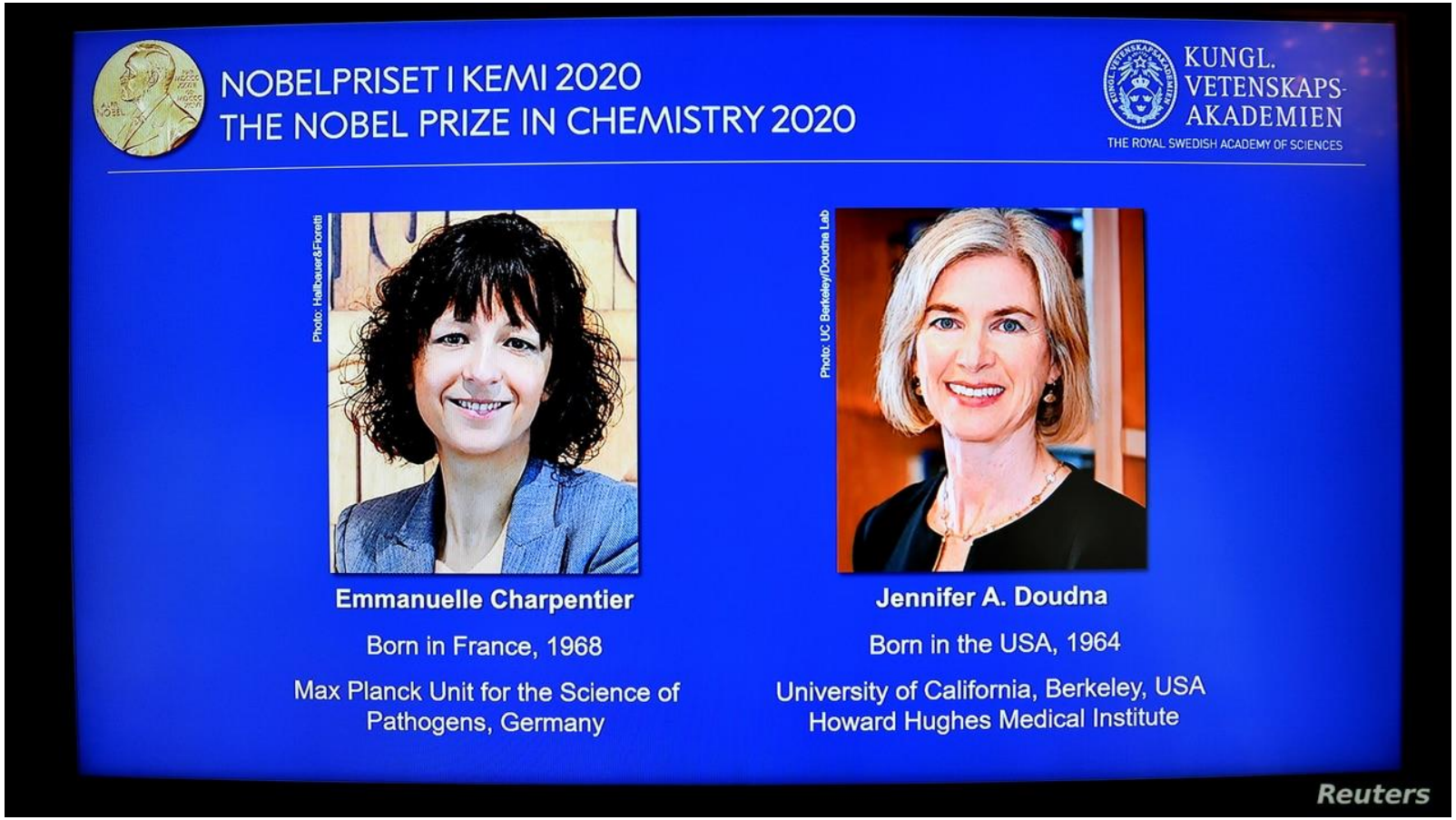
(i) Allow focus on a high risk/ high gain project through generous funding of 1.5-2 million Euros

(ii) Can enable the foundation of a new academic group and earn the submitting PI a Professorship

(iii) Serve as a highly reputable award that can either facilitate tenure/promotion or assist in securing a subsequent academic position

Securing a Grant Does not Reflect your Self-Worth

ERC is a bit like the Nobel Prize…If you get it, it is very likely that you are a good scientist.
But if you do not get it, it is not a reflection on your scientific rigor or potential.



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Describing the ERC Starting Grant Process at a Glance

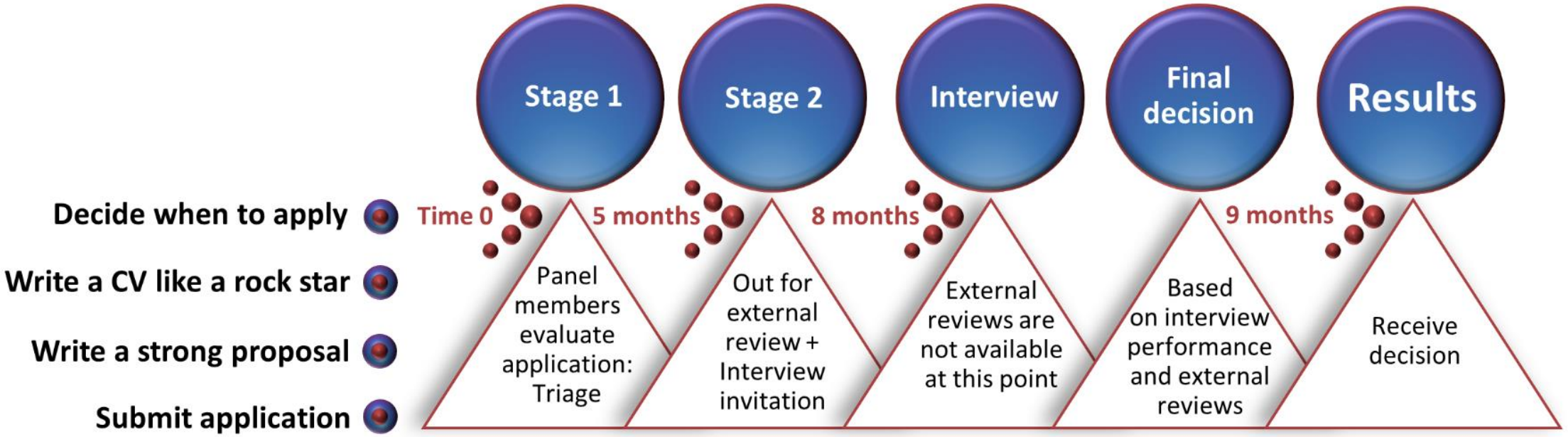

Figure Credit: Dr. Anastasia Besika

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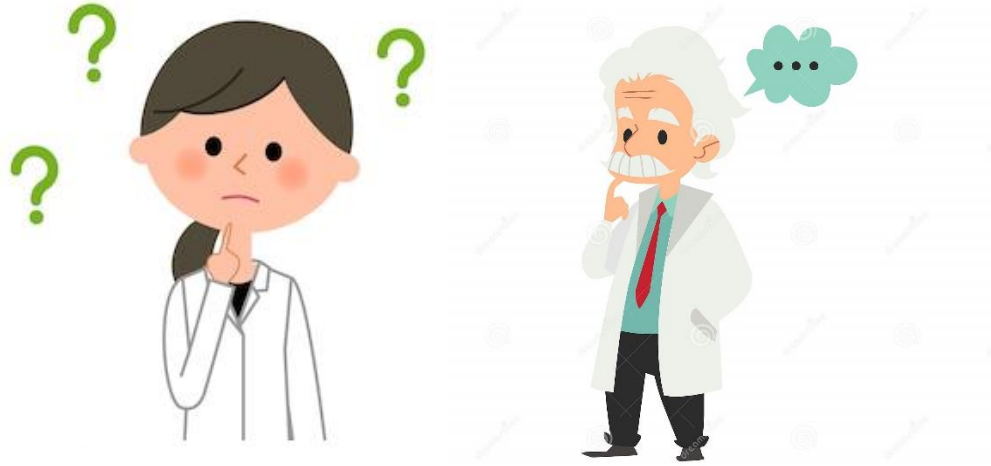
Main Challenge Associated with Securing an ERC Grant

The number of reviewers is shockingly high (up to 12 reviewers)!!!

Nature or Science typically require 4 or 5 reviewers before making a decision...It is already VERY difficult to persuade 5 reviewers to support a paper and, even if I were to choose all the reviewers by myself, I probably do not even have 12 family members who like me that much (and I come from a big Greek family).

Deciding When to Apply



- Check the eligibility window carefully (2 to 7 years from PhD with additional time given for maternity leave, military service, medical leave etc.). If unsure about being eligible, email ERC.

- If you are rejected in Step 1 (70% of the applicants are rejected in this step so it is a very likely scenario), this means you are NOT allowed to apply for the next call. Would you still be eligible in 2 years time?

- If you are at the end of the eligibility window (lets say year 6) this becomes more relevant as a failed application kicks you out of the ERC Starting Grant indefinitely. Would your CV improve a lot if you wait one more year? How confident are you that you can make it to Step 2 with your current CV?

- My general advice is to apply from the second you can, starting year 2 from PhD as this gives you more shots!

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Preparation Before you Start Writing

- Try to find 1 or 2 successful ERC Starting Grants from your field and read them carefully (both CV and proposal)

- Check who got it in your field in the previous year. Do not let this discourage you from applying but also keep in mind that you see only who got it and not who tried to get it meaning that people with better CV might have failed.

- Very Important: Come up with 1 or 2 ideas and discuss with them with a colleague you trust in your specific field (for me that was polymer chemistry) and then with at least two colleagues in your broader field (for me that was a material scientist and a chemist). Remember that even if your specific field will eventually review your proposal, it is the panel (broader field) who will evaluate your application and decide its future.

- Certainly, it may be easier to impress the panel with a real-world application; however, the ERC funds both “basic” and “applied” research. If your proposal is more fundamental in nature (mine was), you can still highlight the broader benefits, even if they are long term, and how your research can lead to a potential societal impact.

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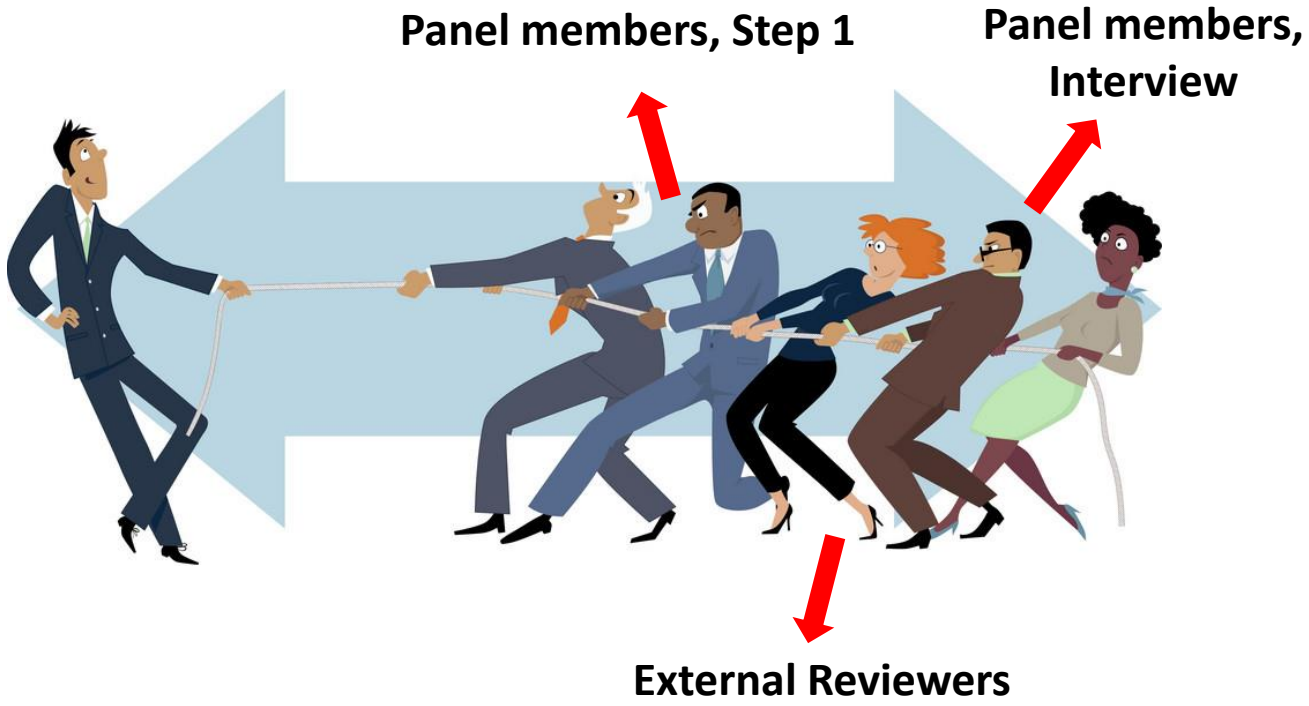
Writing a Strong Proposal

It does not matter if the reviewers/panel members have good intentions at heart, they will all try to take your your proposal down. It is their job to be critical. It is a competitive grant.

So you have to reach perfection. And this is exactly what we will do!



Writing a Strong Proposal

In search of a magic project:

It needs to strike the ***right balance*** of an ***independent idea*** (one that in not a natural continuation of what you did in the past or what your previous advisors would want to do) which though you are absolutely capable of pursuing and the scientific community considers you the ***best person in the world to develop***. Things to consider:

- ***ERC insists on high risk high gain projects:*** What you want is a proposal that is high risk/high reward and at the same time a proposal that you can bring to fruition. Something very challenging and risky but if you were to achieve it (even partially) it would really change the world (or your field, to be more realistic)

- Any sign that your PhD or post-doctoral advisor could also change the field in the same way as you is really not good! They can just do it much better than you as they have more experience, money and people!

- How can you change the field with an idea that is not tested or inspired by your previous research?

Three Options/Alternatives for Developing an ERC Project

Option 1: A Project That is a Natural Continuation of your Previous Work

- **Advantages:** You are a world expert in that field (perfect CV) which also secures feasibility of the project.

- **Disadvantages:** Excite reviewers/panel members about how ground breaking your proposal is as it is "just" a continuation of your previous activities. Why your previous advisors cannot do it instead? How would you establish an independent reputation if you continue working in a similar area (there they will judge your independence)?

Quote from one of the reviewers during my first failed attempt: "*Overall, a large part of the project is a continuation of current PI's work at another institution including the involvement of the PI's current supervisor*" which led the same reviewer to conclude "*Without any doubt all research work done by the PI is of very high level and has gained international recognition, however from the point of view of an ERC Starting Grant the proposed project represents a rather incremental advancement of the well-established activities of the PI rather than a ground breaking concept*".

- If you go with this option make sure you combine your PhD with your post-doc expertise in a unique way so it is considered ground breaking for both fields (you do not want it to look like a combination of ideas).

Option 2: A Project in an Area Where you Have Some Experience and That your Advisors are not Well Known for

- **Advantages:** It can make you appear more independent as your previous advisors are not known for it!

- **Disadvantages:** You are also NOT a world expert in this field! You need to convince everyone that our of all the people out there, you are the one who is able to get the project to work. You also have to convince the reviewers of that field your idea (the idea of a newcomer) is great and creative and you can revolutionize THEIR field with your limited experience on the topic. Because you have limited experience, you can make more mistakes!

Quote from one of the reviewers during my second failed attempt: "*the proposal seems to be very negative about some very strong science and procedures. She arrogantly dismisses the literature. Unfortunately, I would suggest the proposal and its description is naïve*".

- If you choose Option 2, make sure you do not offend anyone by choosing a project where not so many big names have worked on (or refer to their work as amazing without saying you can improve it). Also preliminary data will help!

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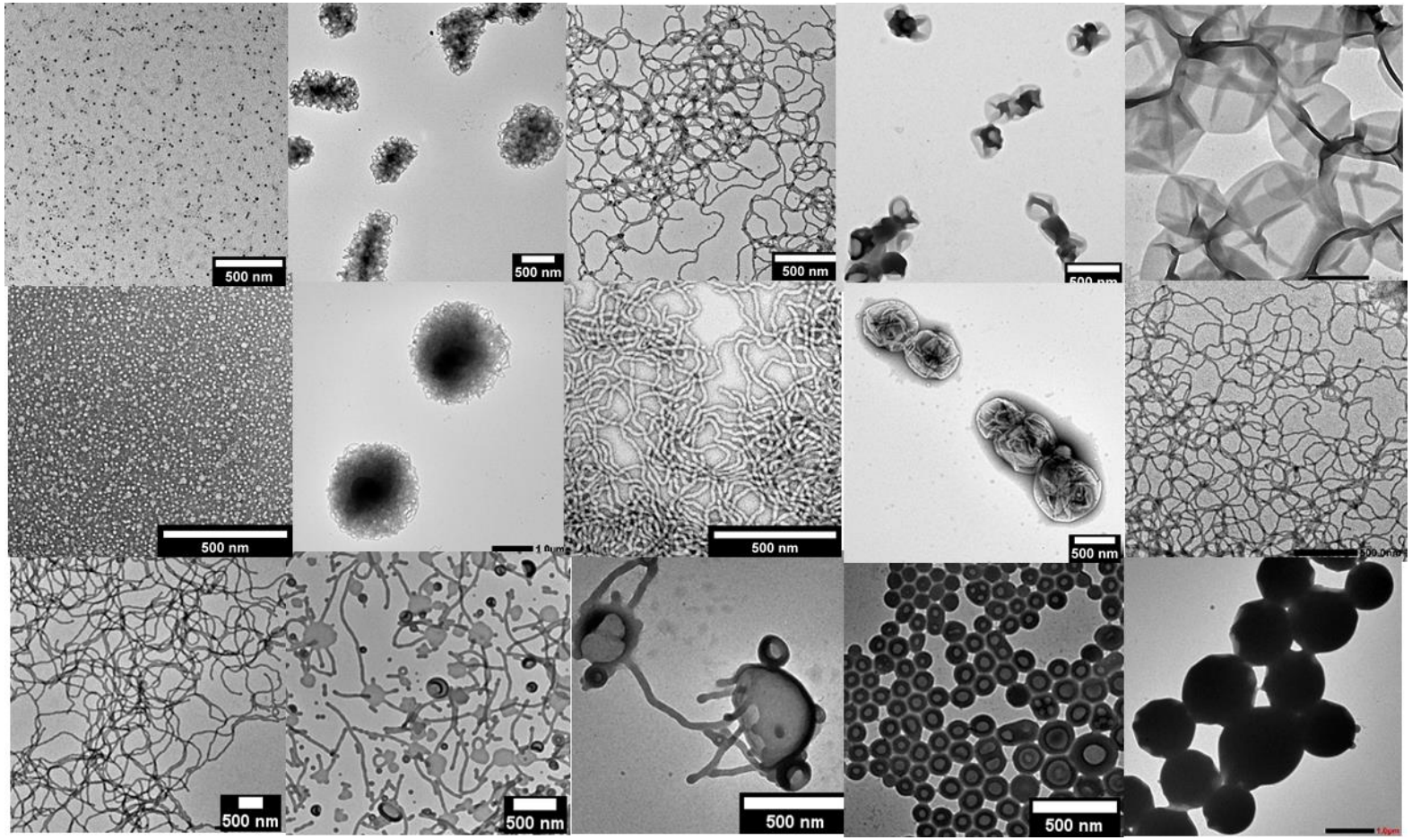
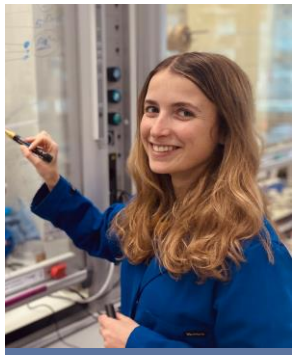
Unsuccessful Grants do not Coincide with Bad Ideas

My group went ahead anyway and realized the proposed research-arguably at a much slower rate than if we had received the grant. Do not let a failure change what you want to achieve. Be stubborn and persistent.



Mr. Kostas Parkatzidis



Dr. Manon Rolland

Parkatzidis, Truong, Rolland, Lutz-Bueno, Pilkington, Mezzenga, Anastasaki, *Angew. Chem. Int. Ed.* **2022**, e202113424
Rolland, Truong, Parkatzidis, Pilkington, Torzynski, Style, Dufresne, Anastasaki *JACS Au,* **2021**, 1, 1975-1986

Option 3: A Dream Project that, if Successful, could Change your Field

- **Disadvantages:** Cannot find any so maybe coming up with the idea ☺

- **Advantages:** Why spending a few months writing a project that cannot change your field?

Feeling inspired will be reflected in your proposal! ERC is interested in frontier research and high gain/high risk Projects. My advice is to stick to your field (so you can keep your reputation) but introduce a new direction that ideally does not have a lot of literature associated with it!

A personal example of such an idea: I have many papers in making polymers through a certain method. I wrote a grant on how to unmake polymers (i.e. reverse the polymerization) by this method. Totally unrelated to my advisors. In fact, no one has done it so I did not have to say that I will do it better than others and offend people. You can argue I have no experience in unmaking polymers. But I am so good at making them (designing catalysts, optimizing conditions, etc.) that who can argue that I cannot make different catalysts and come up with different conditions to unmake them?

Quote from one of the reviewers during my third successful attempt: *"I consider her to belong to the absolute top world wide in the area of atom transfer radical polymerization (ATRP)", "The project could have a very high impact in several fields of polymer science. It will have a large impact on the field of polymer chemistry - more specifically in the large field of controlled radical polymerizations. On the other hand, if the knowledge could be applied to commodity plastics too (foreseen in the very last part of research plan), it would have a great impact on the whole field of polymer recycling."*

The Importance of the CV and how to Advertise yourself

- The name “Starting” suggests that you get the Grant to establish your independent group. The guidelines clearly say that one paper without your PhD advisor is the minimum requirement to demonstrate independence. However, reviewers have to answer to the following question: “To what extent does the PI provide evidence of creative independent thinking?” Most reviewers look for solid proof for independence no matter how good your CV seems.

Quote from Reviewer 1: *“The PI of this project presents an excellent tracking. The candidate has a long and rich professional experience in research. The author has a distinct background in well-renowned laboratories, where Ph.D. and Post-Doctoral positions have been accomplished. The PI has published a very large number of papers in high quality journals with high impact factors such as Angew. Chem or JACS. She has received prestigious awards and distinctions. The PI is involved in several on-going grants, which shows the dynamism of the applicant. The applicant presents an excellent environment to drive a nice scientific project on agreement with her global expertise. The evidence of independent thinking is not fully obvious. From her tracking, autonomous / independent activities are difficult to be separated from the global activities of her prestigious mentors/advisors and could need more time to be further developed”*

This reviewer rated my independent thinking (2/5) which is essentially the kiss of death! The reviewer acknowledged that I have done ground breaking research (4/5) and can successfully execute the project (4/5).
By the way, never ask yourself why you get 4/5 and not 5/5. I think only God can answer this!

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Quote from Reviewer 2: *“The PI was recently appointed as tenure track assistant professor and already has ~12 publications as corresponding author, although none as final senior author (yet). The PI has published a large number of papers (more than 70) with a large fraction in the top general chemistry journals, like Nat Chem, ACIE and JACS.”*

Quote from Reviewer 3: *“The PI is an expert in polymer synthesis and is suitable for performing the research. Her publication record is very impressive, however, in many papers, there are many co-authors so it is difficult to judge the level of independence.”*

Quote from Reviewer 4: *“The PI has a very good background with a high number of publications (roughly 79) in top polymer-related journals. Although she started to publish without her supervisors at different institutions, by checking Google scholar that the reported h-index contributing papers are all published with the well-known scientists she worked with.”* All these reviewers ranked me as 2/5 in independence…

Actions to Better Advertise your CV and Independence

Do not waste time thinking whether the comments you received were fair or unfair. Instead, take them on board and see if there is anything you can do demonstrate your independence more visibly!

- Try to get corresponding and/or last author papers even during your post-doc if your advisor allows it!
- Anything that suggests independence should be explicitly highlighted in your proposal.
- Have you won an award typically given to independent PIs? Tell them!
- Have you acquired independent funding? (i.e. individual post-doc fellowships) Tell them!
- Have you been invited to give a talk at a conference or at a university? Tell them!
- Have you been invited to join a journal's advisory board? Tell them!
- Have you been invited to contribute with a paper to a journal? Tell them!
- Have you been invited to review for an established journal in your field? Tell them!

Tips During the Interview

You are invited to the interview WITHOUT having access to the reviewer's comments, unlike the publication process in which you have time to write a constructive response

- Clearly convey the goals of the proposal for both a broader and a specific audience.

- Make your proposal sound important (it is!). Making a molecule that has not been made before is cool and challenging but it only matters if this molecule is important!

- Either at the beginning or at the end of your presentation summarize your previous achievements and why you are at a good position to realize the proposed project.

- Practice in front of a person in your subfield (polymer chemistry), a person in your broader field (chemistry), and a person slightly outside your field (materials or biology if you are a chemist). Satisfy ALL three of them!

- Periodic blackouts do happen occasionally in Brussels so be prepared to present with just a projector or your printed slides, if requested.

- Answer to the questions clearly, concisely and as efficiently and quickly as possible!

Announcement of Results

Important note: If you are unsuccessful you will receive an email clearly delivering the bad news. If though you are successful you will receive an intriguing email saying that the results are out and you are prompted to login the portal to find out!

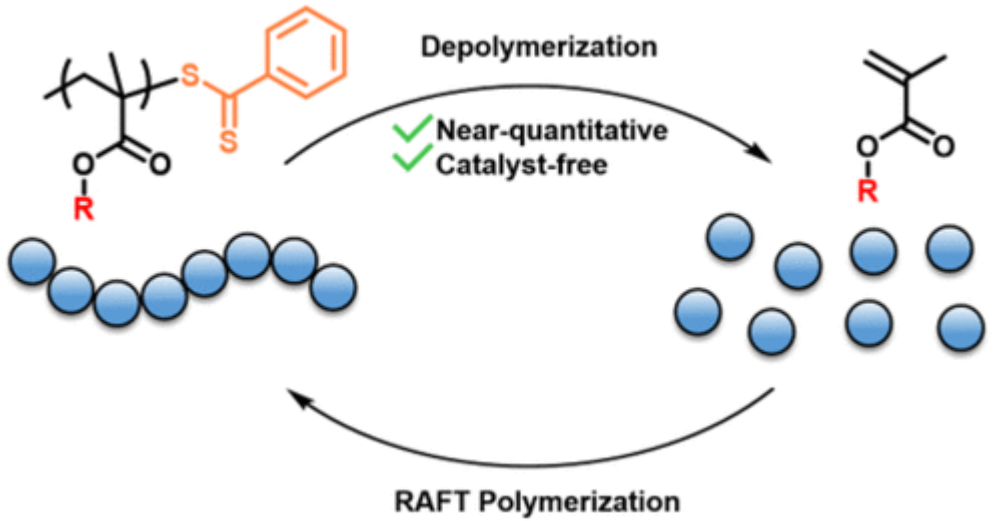
This means you GOT the grant even if it will take you over 10 min to figure this out (resetting passwords to login, try to understand what “grant preparation” means, etc.

If you do not get the grant and that was your last attempt there are some good news for you:

Unsuccessful applicants of the ERC Starting Grant have a lot of chances to apply for the consolidator grant (five attempts), while colleagues with a Starting Grant typically have just one or two chances as they win it towards the end of their eligibility window.

Was it Worth All these to Get a Grant?

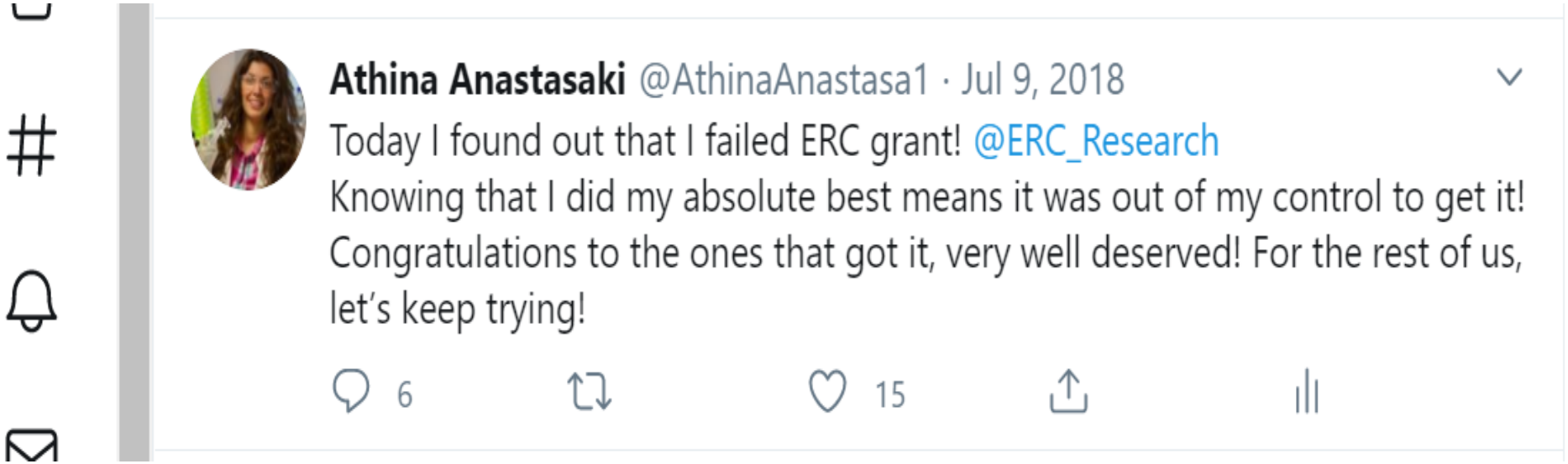
It was worth it: ERC allowed my group to focus on a high risk/high reward area and after 2 years we managed to indeed reverse controlled radical polymerization and report our first publication:



-This work was highlighted by C&EN
-This work was highlighted and interviewed by BBC Radio 5 Live
-This work was highlighted by the ETH Zurich news
-This work was highlighted by CHIMIA
-This work was highlighted by the Department of Materials (ETH)

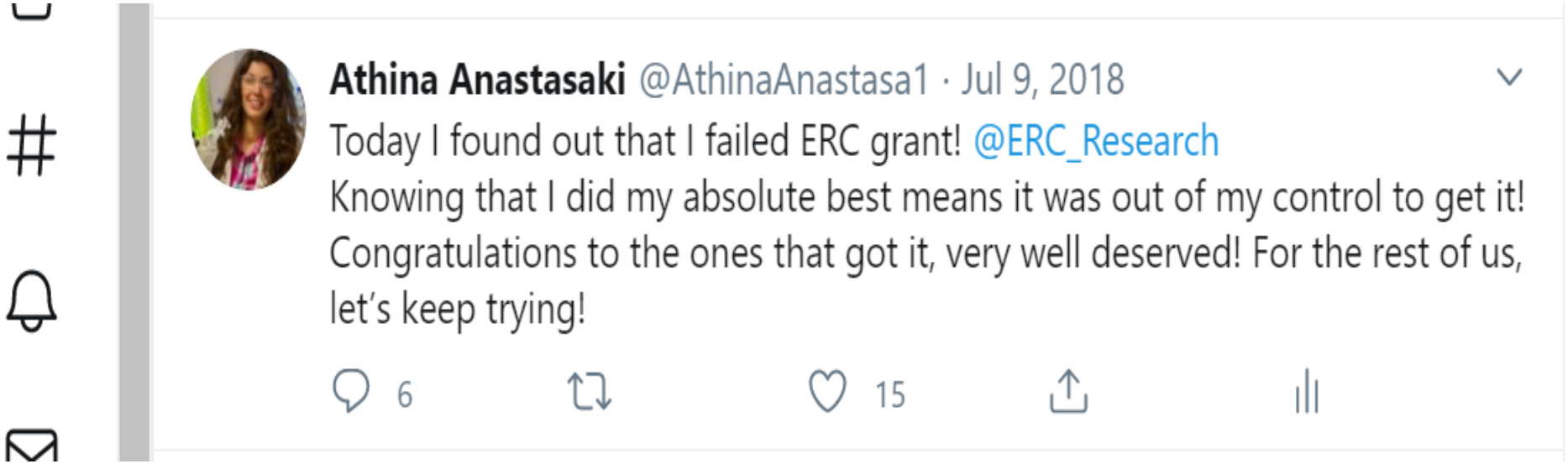
Wang, Truong, Pei, Coote, Anastasaki, *J. Am. Chem. Soc.* **2022**, 144, 4678-4684

Having the Right Attitude Helps



- Embrace rejection, be persistent and improve. I never thought it was unfair to fail. I thought someone else was just better or I failed to convey how good I am and so I have to try harder for the next time. I have learned the hard way that expectations when applying for such a grant should be realistic to avoid disappointment but at the same time you need to dream that you are able to get it. My father told me before I applied for my first time that I should not be targeting the impossible. Yet, I targeted the impossible and dreamed I could get it and the dream came true!

Having the Right Attitude Helps



- If you are a good scientist let people know that you can fail too. It means a lot to many of the younger people. I casually mentioned to a senior figure of polymer chemistry that I was preparing my third ERC application and he equally casually responded to me “P.S. It took me three attempts to get my own ERC grant-so keep trying”. I thought that if a Full Professor with hundreds of papers, awards and such reputation needs to apply three times, I for sure will never complain again and continue applying.

Hopefully you will all be able to Tweet this Eventually

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What Matters for a European Research Council (ERC) Starting Grant?

*Athina Anastasaki**

Abstract: European Research Council (ERC) Starting Grants are arguably the most competitive grants in Europe and their prestige is fully justified considering that they (i) allow focus on a high risk/high gain project through generous funding of 1.5–2 million Euros, (ii) they can enable the foundation of a new academic group and earn the submitting principle investigator a professorship, and (iii) they serve as a highly reputable award that can either facilitate tenure/promotion or assist in securing a subsequent academic position. However, the journey to getting one is far from easy. In this Viewpoint

review (Figure 1). You then automatically receive an email confirming that you made it to Stage 2 and you are invited for an interview. In a similar fashion to the publication process, the panel members serve as the editors who evaluate your proposal/CV and decide on whether it will be sent out for external peer review. However, the big difference between a paper and an ERC Grant is that there can be up to 12 independent reviewers evaluating your proposal. This is in contrast to academic publishing, whereby Nature and Science (arguably the two most prestigious journals in the natural sciences) typically require four or five reviewers

Anastasaki, *Angew. Chem. Int. Ed.* **2022**, e202206303

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Proud PI-my Group is the Best! Thank you!