

AAPS Introductions in the Pharmaceutical Sciences

Sean Ekins

Winning Grants



AAPS Introductions in the Pharmaceutical Sciences

Volume 17

Founding Editor

Robin Zavod, Chicago College of Pharmacy
Midwestern University
Downers Grove, IL, USA

Series Editor

Claudio Salomon, National University of Rosario
Rosario, Argentina

The *AAPS Introductions in the Pharmaceutical Sciences* book series is designed to support pharmaceutical scientists at the point of knowledge transition. Springer and the American Association of Pharmaceutical Scientists (AAPS) have partnered again to produce a second series that juxtaposes the *AAPS Advances in the Pharmaceutical Sciences* series. Whether shifting between positions, business models, research project objectives, or at a crossroad in professional development, scientists need to retool to meet the needs of the new scientific challenges ahead of them. These educational pivot points require the learner to develop new vocabulary in order to effectively communicate across disciplines, appreciate historical evolution within the knowledge area with the aim of appreciating the current limitations and potential for growth, learn new skills and evaluation metrics so that project planning and subsequent evolution are evidence-based, as well as to simply “dust the rust off” content learned in previous educational or employment settings, or utilized during former scientific explorations. The *Introductions* book series will meet these needs and serve as a quick and easy-to-digest resource for contemporary science.

Sean Ekins

Winning Grants

 Springer

 **aaps**[®]

Sean Ekins
Collaborations Pharmaceuticals Inc.
Raleigh, NC, USA

ISSN 2522-834X ISSN 2522-8358 (electronic)
AAPS Introductions in the Pharmaceutical Sciences
ISBN 978-3-031-27515-9 ISBN 978-3-031-27516-6 (eBook)
<https://doi.org/10.1007/978-3-031-27516-6>

© American Association of Pharmaceutical Scientists 2023

Jointly published with American Association of Pharmaceutical Scientists

This work is subject to copyright. All rights are solely and exclusively licensed by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publishers, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publishers nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publishers remain neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland



But it is pretty to see what money will do.
(Samuel Pepys)

For Maggie, Penelope and Enzo

Preface

Like 99.99% of you reading this book, I will be the first to admit that I am not a ‘professional grant writer’ and I would hesitate to call myself a writer either. Having won grants for other people’s companies as a scientist/employee and for companies that I have co-founded or founded myself, I have seen first-hand the impact that such grants can bring in hiring people, developing technologies (whether software, molecules or in making other discoveries), building companies and enabling the creation of intellectual property. To echo Samuel Pepys’s quote on the previous page, *it is pretty to see what money will do.*

I have also served on many study sections tasked with reviewing various types of grants, from NIH grants through to foundation grants. This process maintains the confidentiality of the material under review but is also insightful for the reviewers to experience and see at close quarters the expectations of your peers and what it takes to score them well. Without sharing any confidential information, I can now share my insights from the many grants I have submitted and from the perspective of completing the components of the complete write-review-win cycle. For many readers, winning grants will also be important for your career, team, company, state and country. I would also say that it is your patriotic duty (but that may be going a bit far) as our nation competes with every other country around the globe to develop the next breakthrough products, whether they are devices, drugs, software or beyond. So, you will need to know how to write and submit grants repeatedly because you will likely have this weight on your shoulders at least metaphorically for the rest of your working career.

I also have a unique perspective as I have also experienced grant failure or rejection, however you want to describe it; at times it seems never ending. Sometimes you will miss funding by a literal point on the score and more often by a mile as you have complete disasters. Sometimes you can predict the response, otherwise you will be taken by complete surprise (preferably in a good way). Admittedly failure is an important part of grant writing and winning grants, as you will learn from this, so you need to prepare, grit your teeth, read the reviews and try again. If you are very lucky, you may only have a 100% record for the first grant and after that it is downhill from there. Based on my own experience, having persistence will pay off,

and if you do it long enough, you will consistently win more grants. You will likely also experience both grant ‘famine’ and grant ‘feast’ periods. Just like there are swings in employment and the stock market, there will also be shifts in grant funding, changes in funding priorities that may directly or indirectly impact you and your probability of success.

It is almost inevitable that as an academic or a small business owner, you will need to write grants at some point in your career. Writing them though is not enough, what you also need to know is how to win grants. While there has been much that has been written about writing grants, the mysterious special ability called ‘grantsmanship’ or perhaps more correctly ‘grantspersonship’, it occurred to me that there is a need to come at this differently and spill the beans. As I said I am not a great writer (as you will see), but I have mostly learnt from my writing mistakes (so please send me feedback), so that I can try to craft a story in each grant proposal that I write. The difficulty in winning a major grant, in particular a National Institutes of Health (NIH) grant like an R01, in the USA is often described, it is increasingly competitive and seemingly gets tougher every year. But there are other types of grants that are worth trying for which may have an increased probability of funding. Your proposal must also stand out, it must connect with the reviewers in a positive way and make an impression. This is certainly true for all types of grants, always give the reviewer what they want or are looking for to maximise your score. But also, you may need to connect to the program officer, the committee that ultimately makes funding decisions and you must take care of a myriad of other details outside of the main event which is describing the ‘science’. In some cases, you may also need to literally negotiate to get your grant over the line and funded. Thinking of it as a battle may not be too far away as a comparator as there is elements of strategy that come in. This means you absolutely cannot solely rely on just outwriting the competition. It is more than that as you have to out-think, out-strategise and out-schmoose them as well. If you have been continually funded for decades, you likely will not need this book and I congratulate you on your terrific success, but if you want to keep being funded, there is no guarantee that the skills and research that got you there will keep you in your position. What was a hot technology 4-5 years ago when you won the grant is not the new thing anymore, you will need to do something different, but what? You therefore need to not only think about continually writing great grants, you need to put it into practice and win them.

Having written and won grants from the NIH and DOD over the past 18 years (and longer by the time you read this), I can speak with some degree of authority and yet I feel I am still in ‘grant learning mode’. Without being over-confident, I can say that I have absolutely no idea when I submit a grant whether it will be funded. Like you I am still hoping for a bit of luck. But I can be prepared, do my best and make sure that I comply with all the requirements. Each grant and study section will be different even with agencies like the NIH. Whether a big or small grant, it does not seem to make a difference as the reviewers will critique your efforts, they may not like it, they may reject your ideas or they may love it. Perhaps their responses are somewhere in this sliding scale. You only have some small degree of control on the grant until the proposal leaves your hands or more correctly you click ‘submit’

as it is electronic. You will also need to think of ways to differentiate your grant from the hundreds of others being submitted, but you cannot change who you are, your history, so how you describe yourself and your team participating in the proposal will also have an impact. Similarly, where you work, your facilities and collaborators or lack of will also influence the reviewers. You could therefore spend hundreds of hours on writing your grant proposal or just a day and the outcome might still be the same. Believe me as I have virtually done this experiment as you will see. This small book is a summary of my own adventures and personal experiences of grant writing and overall preparation and will hopefully provide some advice that will help you learn how to do a better job of winning grants yourself. At the very least by getting all of this out in the open, I can feel some degree of being able to help a few others in this quest for the seemingly grant winning perfection.

But first I should answer the question you are going to ask. Why am I writing this? This book initially came about after what can only be described as a dry grant spell (a famine) during 2020-2021. It was one of those moments where you think perhaps you have completely lost your touch; in this case I must thank the COVID-19 pandemic and the vagaries of the US government deciding to massively fund research on this virus to what seemed like almost near exclusion of everything else. It was at this low point when my wife Dr. Maggie Hupey who is the COO of our company suggested this idea. 'You could always write a book on writing grants'. Then as luck would have it, a notice of award came in soon after just in the nick of time to 'keep the company lights on' and I realized we should start this idea afresh and at the same time try to help others to realize their potential through winning grants. I could either spend my time and work on writing a few more grants or I could write this book. I then drafted an outline in the space of a week and what followed has been the most incredible grant "feast" with several more grants awarded. Naturally this put a halt to writing while we dealt with bringing in multiple grants back-to-back alongside hiring staff in the most difficult hiring environment for years! The 9 months since writing the first draft have also enabled me to decrease my grant writing for the first time since starting the company. That also made me realize that this book was only going to happen if I could get a publisher interested and that would provide the incentive. So here we are, finally, you get to hear about my over >27 years of experience in pharmaceutical industry and for most of them I have been writing grants. Over the last few years, I have been immensely fortunate to work with several other terrific scientists in my small grant-funded company that have also helped write and win some of the grants (and hopefully learnt something from this process) while ultimately performing the work we proposed with collaborators.

I would like to thank my colleagues Dr. Ana Puhl, Dr. Thomas Lane, Dr. Fabio Urbina, Dr. Patricia Vignaux, and former colleague Ms. Kimberley Zorn for all their help writing and winning these grants over the past 7 years. To those collaborators on grants, Dr. Vadim Makarov, Dr. Stephen Wright, Dr. Nathan Cherrington, Dr. Jonathan Cooper, Dr. Miriam Braunstein, Dr. Anthony Hickey, Dr. Seth Kullman, collaborators at Battelle, Dr. Jair de Siqueira Neto, Dr. Joel Freundlich, Dr. Craig McElroy and the many collaborators that have not been funded (yet), a very big