

Crowdfunding your outreach

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In recent years, crowdfunding platforms have gained popularity as a way to raise funds for various endeavors. This talk discusses the use of crowdfunding as a non-traditional way to finance physics outreach projects. Such tools can provide much needed flexibility to projects and serve as a platform to spread the word about your project. The talk is based on first-hand experience using such tools and includes a discussion of important advice and common pitfalls.

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1. What is crowdfunding

In a nutshell, crowdfunding is the procedure of raising funds from many individuals for a specific project (typically a physical product or a creative endeavor). Individuals commit to providing a small amount of funding towards the goal of making the project a reality, typically in exchange for the promise of some kind of return. Here we consider the funding physics outreach projects with crowdfunding as an alternative to the more traditional ways to fund a project, such as seeking financial support from a University or a funding agency.

Let's build some vocabulary to speak about crowdfunding:

- **Creator** is the author(s) of the project.
- **Backer** is the interested individual who supports the project by making a **pledge**.
- **Platform** is a web-resource that facilitates the communication between the creators and backers.
- **Campaign page** or simply **campaign** is the web-page on the platform with text, pictures and videos that present the project.
- **Reward** is the product that the creator promises to deliver to the backer in case of the successful finish of the campaign.

Today, crowdfunding is a well-developed niche, with global market size of order 100 billion euros annually. There are several major platforms where creators can present their projects and where backers can discover the products and make their pledges. To name a few, Kickstarter (www.kickstarter.com) is a platform with most conservative rules: it only accepts project that create something new, allows creators to run the campaign for a limited time (typically a month), and uses the all-or-nothing policy: if the campaign doesn't collect sufficient pledges to meet the funding goal set by the creator, all pledges return to backers. Another commonly used platform is Indiegogo (www.indiegogo.com), which is more lenient on all the three points where Kickstarter is restrictive. Other specialized crowdfunding platforms exist, some of which are dedicated to specific types of endeavors and others which are specific to a country or region.

Suppose you want to write a book or create an educational board game. With crowdfunding you could use pre-orders to collect funding for your project while selling it to interested individuals. The advantage of this approach is that this way you gauge interest in your creation, you produce only the needed amount of product, and you get a nice kick start to further develop your idea.

If you organise an outreach event, you can offer your backers some exclusive materials. In general, many people are willing to support an interesting campaign for the sake of seeing its success, even if they would receive a disproportionately small reward.

2. Two successful examples

There are numerous encouraging examples of successful outreach or educational crowdfunding campaigns [1], of which many have raised of order a million euros from thousands of backers. Here we will focus on two examples by the authors of this contribution. Both projects explore the idea of a custom deck of classic poker playing cards.

2.1 QED playing cards by J. & Y. Veatch

Cardistry is the performance art of card flourishes. It is a popular activity, especially among the young individuals. Unlike card magic, cardistry is meant to be visually impressive and appear very hard to execute. The playing cards, used for cardistry, must be of highest quality, and a special attention is paid to the card back design. The QUANTUM deck [2] explores exactly this trend. The court cards (jacks, queens and kings) are based on the classical card design and represent twelve of the most important physicists from the history of quantum mechanics: the faces are the stylised portraits, the attributes of the characters (like swords and scepters) are replaced with atom diagrams and formulas and the dressings are covered with physical symbols, see examples in Figure 1.

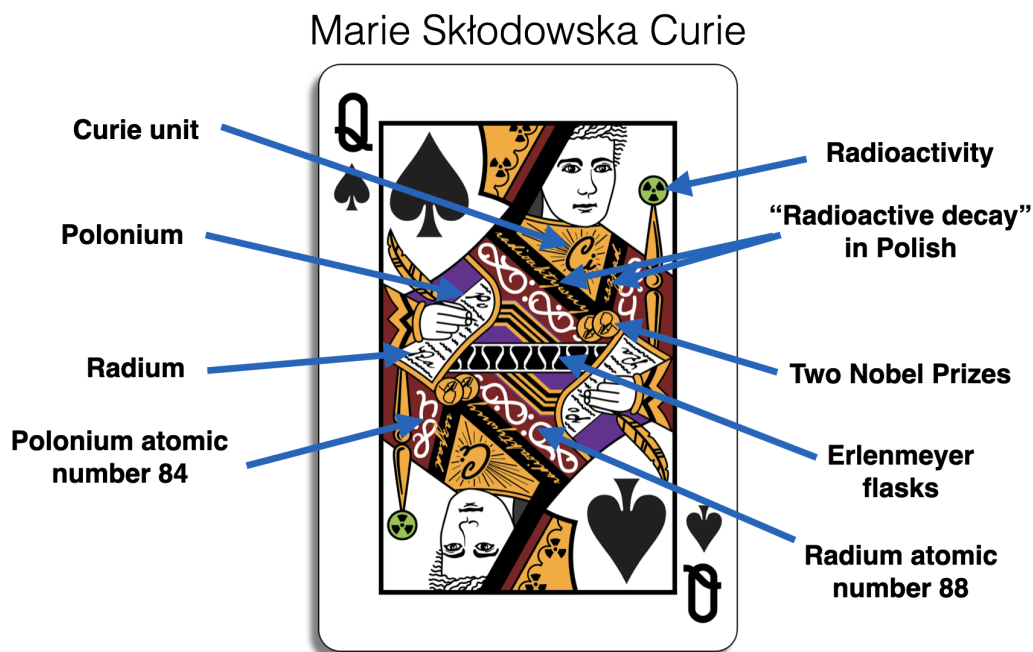


Figure 1: An example of a Quantum card: queen of spades, representing Marie Skłodowska-Curie. The card is densely packed with references to Curie’s scientific and personal life.

The Quantum cards are printed by [Cartamundi](#), one of the universally recognised leader in making high quality playing cards. The authors also wrote a small booklet where they describe each card, tell the story of the depicted physicist and their scientific discoveries. The electronic version of the booklet is available for free on the QED Playing Cards website [2]. The Kickstarter campaign for QUANTUM deck project ran in spring 2021 and successfully collected over 30 thousand euro, which overcomes the goal by more than 4 times (the goal of the campaign was 7300 euro). There are several more decks in development right now, offering more insights into the modern physics.

2.2 Physics is My Favorite Game project by M. Stolpovskiy

While the "Physics is My Favorite Game" project [3] also explores the idea of redesigning the playing cards, this project is less about cardistry and more about education. All 54 cards of a standard poker deck are illustrated in flat design style. Each suit is dedicated to one branch of physics: quantum mechanics, particle physics, astrophysics and cosmology. Numbers represent

the most important phenomena, from the most basic ones (2-6) to the cutting edge of modern research (7-10). Court cards represent physicists who made the most important contribution to the development of this branch and their discoveries. Ace depicts the key concept for the whole branch. Jokers show two main theories to tie together the micro and macro physics: string theory and quantum gravity as shown in Figure 2.

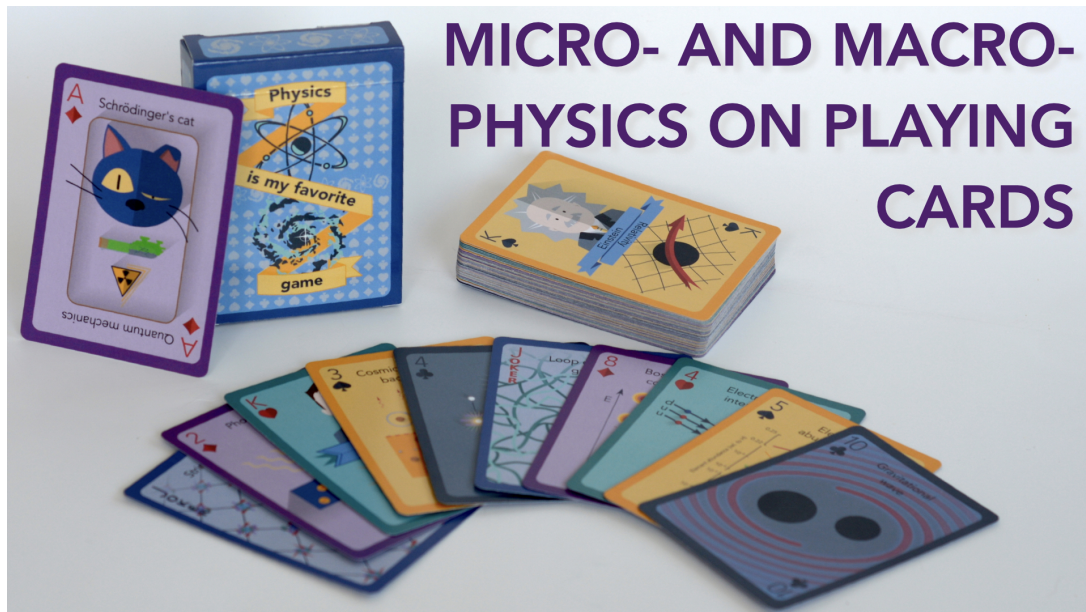


Figure 2: The title photo of the "Physics is My Favorite Game" first deck.

A 54-pages book is written, one page per card, to explain the subjects depicted on the cards and to show all the beautiful connections between the different branches of physics. The book is available for free download [3].

The Kickstarter campaign ran in fall 2021 and successfully raised 7500 euros (500 more than was the goal). The cards are printed with [MakePlayingCards](#), which offers excellent flexibility for design and production, resulting in high-quality cards.

There are 3 decks planned for the "Physics is My Favorite Game" project. While the first deck is dedicated to the fundamental physics, the second is more oriented towards the experimental physics and the third is for the history of physics. Although all three decks tell about physics, all three are illustrated in different styles. The second deck is drawn in watercolors and markers as shown in Figure 3.

3. Crowdfunding campaign basics

While making the campaign page on a platform it is important to consider the following points:

- A short but informative title and subtitle.
- Setting the funding goal (make sure to include the shipping costs!).
- Campaign length (usually 30 days. Often there is a possibility to run a longer campaign, but it is not always the best option, since on the longer run it is harder to keep backers interested).



Figure 3: A 3d render of the four aces from the second deck of the "Physics is My Favorite Game" project.

- Rewards, which should include a variety of tiers (for the mentioned playing card projects it is simply one or more copies of the deck).
- Catchy title picture and video.
- Nice section headers for easy navigation.
- Campaign description full of details and nice pictures.
- Text must be thorough but short.
- It might be useful to add detailed instructions for the first-time backers.
- Optionally, campaign can include some stretch goals. For instance, the QUANTUM deck project offered nice stickers once the campaign pledges passed a given level.

The campaign should serve two primary purposes for making your project a success. First, it should make potential backers interested in your project. Second, and in many ways most importantly, it should demonstrate to potential backers that they can have confidence that you will bring the project to completion as promised and will deliver their rewards. Crowdfunding platforms do not offer guarantees to backers, so it is up to you to do so. This means that you need to demonstrate that you care about the project, that you have done your due diligence to know the details of the production and delivery, and that you will carefully provide updates to your backers at every step of the project.

While preparing the campaign, one should also finalize all the details before the launch. It is always useful to ask friends for an honest feedback. Don't neglect prototyping. On one hand it can help you to avoid the design flaws and verify the production quality. On the other hand, the pictures of the prototypes likely would look nicer than computer generated images. Answer yourself: who would manufacture your product? who will ship it? will they ship to all countries? will they warehouse and continue to ship your product on an ongoing basis? Don't take anything on granted, ensure every detail of the production.

While assigning the funding goal, keep it as low as possible to maximize the chances of success, but make sure it covers all your costs so you don't get stuck with a large bill that isn't covered. While running the campaign remember it is vital to keep backers updated about the progress. Provide regular updates, whether good or bad. This helps to keep backers interested and engaged while minimizing their concerns about the completion of the project.

3.1 Marketing

Possibly the most important factor in the success of a crowdfunding project is marketing. People only support projects they see. You need to build a social media presence at least 1-2 month before the launch of your campaign. It can be a good idea to partner with some relevant influencers to help spread awareness of your project. Overall, spend at least as much effort on marketing as on the product itself, because every effort will help to drive traffic to your campaign.

4. Conclusions

As crowdfunding creators, we would like to offer insights learned through our own experiences. While crowdfunding is not the optimal solution to all outreach endeavors, it can provide opportunities for unique projects that otherwise might not be completed. Also, it is not simple to run a successful campaign and it can at times be frustrating and discouraging. But if you prepare your campaign well, if you pay a lot of attention to the marketing, and if you are willing to share all news with your backers, very likely you'll be successful. The authors wish luck to every science outreach enthusiast. We would be glad to help you with a detailed advice in your crowdfunding journey! Please feel free to reach out with any questions you may have.

References

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- [2] <https://www.kickstarter.com/projects/qedplayingcards/quantum-playing-cards>
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<https://www.qedplayingcards.com>
- [3] <https://www.kickstarter.com/projects/physicscards/playing-cards-about-fundamental-physics>
Book: https://github.com/MStolpovskiy/Physics_cards_book/blob/main/book.pdf
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