



NORMALIZING FAILURE

IMPOSTER PHENOMENON

- **Definition:** High-achieving individuals who, despite their objective successes, fail to internalize their accomplishments and have persistent self-doubt and fear of being exposed as a fraud or imposter¹
- **Imposter phenomenon criteria:** The imposter cycle, perfectionism, super-heroism, fear of failure, denial of competence, fear and guilt about success²
- What imposter phenomenon can look like in **biomedical researchers**
 - Feeling unworthy of authorship, awards, or grant funding
 - Viewing manuscript or grant rejection as evidence of personal inadequacy rather than a routine part of science
 - Believing peers understand the science better than you do
 - Interpreting normal uncertainty in research as incompetence
 - Feeling that one must know all the answers despite working in a field defined by unanswered questions

HOW ACADEMIC CULTURE INFLUENCES EXPECTATIONS OF RESEARCH SUCCESS

- Career trajectories of biomedical researchers
 - **Perception:** “Most post-docs are able to secure a tenure-track position within 10 years of receiving their PhD. If I don’t pursue an academic faculty position, I am a failure.”
 - **Reality:** Most biomedical PhD graduates do not pursue an academic faculty position
 - ~75% of biomedical PhD graduates pursue careers beyond traditional academic faculty roles (industry, government, nonprofit, policy, communication, and other sectors)³
- Measures of academic success
 - **Perception:** “Successful researchers get every grant they apply for.”
 - **Reality:** Rejection is the norm rather than the exception
 - In 2024, the success rate for R01 grants was 19%, or 1 in 5
 - **CV of failures:** Idea pioneered by Melanie Stefan, Professor of Physiology at Medical School Berlin, and head of a computational neurobiology research lab⁴
 - For Johannes Haushofer, his CV of failures has received way more attention than his entire body of academic work⁵

INTERVENTIONS TO NORMALIZE FAILURE IN BIOMEDICAL RESEARCH PROGRAMS

- **Lab-level interventions** to normalize failure
 - **CV of failures:** Emphasizes that rejection is common in research
 - **Principal Investigator rejection sharing:** PIs share their own unfunded grants and manuscript rejections, illustrating that even successful researchers encounter setbacks
 - **Failure rounds at lab meetings:** Allocate 10–15 minutes to discuss unsuccessful experiments and unexpected results
 - Focus on lessons learned rather than defending the experiment
- **Department-level interventions** to normalize failure
 - **Panel of failures:** Features respected researchers discussing common rejection in research
 - Panelists are objectively "successful", well-respected researchers
 - Panelists share rejected papers, worst grant reviews, projects that consumed years without publication, etc
 - Annual panel with different panelists each year



TRAINING TO ENHANCE RESEARCHER RESILIENCE AND ADAPTABILITY

- Gather feedback from participants on how to make the panel better
- Refer to the **panel facilitator guide** and **assessment survey questions** for more information on how to host a panel of failures
- **Internal grant mechanisms** to provide funding for:
 - **Experimental pilot projects** with a high risk of failure
 - **Bridge funding** for pivots
- **Grant rejection discussions** involve sharing score sheets and critiques, emphasizing **resubmission strategies** and **emotional normalization**

REFRAMING FAILURE IN BIOMEDICAL RESEARCH

- Failure is defined as a "**lack of success**" in the Merriam-Webster dictionary
- Albert Einstein said, "**Failure is success in progress,**" urging us to see failure as a **stepping stone to growth**
- **Each failure provides lessons** that foster resilience, innovation, and personal development
- We should promote an environment where failure is viewed as a **natural part of the journey** to success



REFERENCES

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