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## CONTESTS



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### Current Essay Contest

#### Introduction

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November 2010 -  
February 2011

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May - October 2009

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#### The Nature of Time

August - December 2008

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## FQXi ESSAY CONTEST: Introduction

November 26, 2012

### Questioning the Foundations

*Which of Our Basic Physical Assumptions Are Wrong?*

May 24 - August 31, 2012

#### Essay Contest Partners:



GRUBER  
FOUNDATION



SCIENTIFIC  
AMERICAN

[Read the contest entries!](#)

### I. GOALS & INTENT

The goals of the Foundational Questions Essay Contest (the "Contest") are to:

- Encourage and support rigorous, innovative, and influential thinking about foundational questions in physics and cosmology;
- Identify and reward top thinkers in foundational questions; and,
- Provide an arena for discussion and exchange of ideas regarding foundational questions.

For examples of previous FQXi contests, please see the list to the left.

### II. EVALUATION CRITERIA

An expert panel of judges will be instructed (and general readers strongly encouraged) to rate the entries by the degree to which they are *relevant* and *interesting*, as more specifically described below, with 1/3 weight given to relevancy and 2/3 weight given to interest.

- **Relevant:** Essays should be *topical* and *foundational*.
  - *Topical:* The theme for this Essay Contest is: **"Questioning the Foundations: Which of Our Basic Physical assumptions are Wrong?"**

What assumptions are ripe for rethinking? Looking back over the history of physics we can identify a number of places where thinkers were "stuck" and had to let go of some cherished assumptions to make progress. Often this was forced by experiment, an internal inconsistency in accepted physics, or simply a particular philosophical intuition. What are the tacit or explicit assumptions we are making now that are ripe for re-thinking?

- Possible topics or sub-questions include, but are not limited to:

- What exactly are the basic physical and mathematical postulates in our "fundamental" physical theories or candidate theories?
  - Which of these could be replaced with a weaker or less restrictive postulate or even removed?
  - What about replacing them with more restrictive postulates?
  - What would be the potential benefits (or disadvantages) of these changes?
- What are the implicit assumptions we tend to forget we have postulated, or that have become so ingrained that they have become unquestioned dogma?
- What are the most interesting current "anomalous" experiments, and what assumptions

- Which assumptions in physics and in cosmology are interdependent or required for self-consistency, and which could be modified?
- Where are there "paradoxes", or apparent contradictions stemming from the combination of seemingly reasonable assumptions? How do we reconcile these?
- Are there "meta"-assumptions or criteria (e.g. "simplicity", or "beauty", or "utility") that can or should underlie some current "fundamental" assumptions?

(Note: **Successful and interesting essays will not use this topic as an opportunity** to trot out their pet theories simply because those theories reject assumptions of some other or established theory. Rather, the challenge here is to create new and insightful questions or analysis about basic, often tacit, assumptions that can be questioned but often are not.)

Additionally, to be consonant with FQXi's scope and goals, most essays should be primarily concerned with physics (mainly quantum physics, high energy "fundamental" physics, and gravity), cosmology (mainly of the early universe). However, essays in closely related fields (such as astrophysics, astrobiology, biophysics, mathematics, complexity and emergence, and philosophy of physics) are also of interest insofar as they bear directly on the essay topic and can be enjoyed/evaluated by readers with principle expertise in physics and cosmology.

- *Foundational*: This Contest is limited to works addressing, in one of its many facets, our understanding of the deep or "ultimate" nature of reality.
- **Interesting**: An interesting essay is:
  - *Original and Creative*: Foremost, the intellectual content of the essay must push forward understanding of the topic in a fresh way or with new perspective. While the essay may or may not constitute original research, if the core ideas are largely contained in published works, those works should be the author's. At the same time, the entry should differ substantially from any previously published piece by the author.
  - *Technically correct and rigorously argued*, to the degree of a published work or grant proposal.
  - *Well and clearly written*, so that it is comprehensible and enjoyable to read.
  - *Accessible* to a diverse, well-educated but non-specialist audience, aiming in the range between the level of Scientific American and a review article in Science or Nature.

### III. CONTEST RULES & PROCEDURES

Applications will be accepted electronically through the [form](#) on FQXi's website, as follows:

- **ENTRY**
  - *Submission*: Essays and accompanying material must be submitted online using the [webform](#) between the dates of May 24, 2012 and August 31, 2012 (until 11:59PM Eastern Time). Applicants must provide accurate contact information, an abstract of their essay, a brief biographical statement, and their essay. Immediately after an essay application is submitted, the applicant will receive an application confirmation email containing this information at their specified email address. This confirmation does not mean your essay has been accepted into the Contest. All essays will be reviewed for rule compliance (see "Publication" below) and those that are eligible will be posted online within one week.
  - Please note: You will be required to register an email address with fqxi.org and set up an account to enter the Contest. This information is available on the application page.
  - *Acceptability*: In order to be judged, essays must at least satisfy minimal professional standards of acceptability for publication, both qualitative and quantitative.
  - *Format & length*: Essays must be submitted as PDF documents. Eligible essays must comply with these guidelines:
    - The body of the essay may not exceed 9 pages and 25,000 characters (not including spaces). To ensure your submission fits the character count, you can use our online character [counter](#).
    - This 9 page limit includes all figures and equations, calculated based on a standard 8.5 x 11 inch single-sided page with 1 inch margins. The following can be appended to these 9 pages: one page of references, and up to two pages of technical endnotes. No essay text (such as textual footnotes), figures, notations, or equations can be included in the reference section. The technical endnotes are meant to provide an opportunity for additional technical detail while retaining a readable, accessible, and self-contained essay body; all essay reviewers, including the Expert Judges, will be encouraged to focus on the body of the essay, and use the endnotes only as a technical supplement to a self-contained work.
    - Color figures as well as hyperlinks within the document are acceptable.
    - Although FQXi will accept essays from anyone anywhere, the essay must be submitted in English.

- *Publication*: After submission and review for rule compliance, each essay will be posted (within one week) in the FQXi Community Forum, under the category "Questioning the Foundations", along with each author name and bio. Thereafter, the author and interested readers (including FQXi Members, other Contest entrants, and the general public) are invited to discuss and comment on the essay. (Although commenters will be rating the essays, the goal of the forum is to discuss the essays and the ideas they raise; thus commenters are strongly encouraged to cultivate a supportive atmosphere of scientific conversation rather than a judgmental atmosphere of critical scoring and evaluation.)

#### ● JUDGING

- *Community evaluation*: Every FQXi Member and approved Contest entrant will be provided with a code allowing them to rate essays as a "Community evaluator", on a scale of 1-10 (10 being extremely relevant and interesting). A rating code will be provided to each entrant in the confirmation email. If an essay is considered ineligible in the Contest, the rating code will not be active. Community ratings can be submitted until 11:59PM Eastern Time, October 5, 2012.
- *Finalists*: A set of thirty-five finalists (the "Finalists") will be determined once voting closes, based on the essays with the top Community ratings that have each received at least ten ratings.
- *Expert Judges*: A panel of the applicants' peers, chosen by FQXi, will be asked to carefully review, deliberate upon, and rate the Finalists, based on the criteria specified under "Evaluation Criteria".

This expert panel of judges will be confidential; their names will not be released, though they are free to post online comments just as any Community or Public evaluator.

- *Final Ranking*: The final ranking that determines the prize Winners will be determined by a combination of the Community ratings and ratings from expert judges, where each rating from an expert judge is given three times the weight of each rating from a Community evaluator, and combined ratings are rounded to one decimal (i.e., 1.0-10.0).
- *Special Commendation*: The Judges will also have the option, if they elect to do so, to award up to two prizes to the top essays from "non-professional and/or non-academic" entrants, based on the judging criteria set forth herein.
- *Public evaluation*: Members of the public will also be allowed to rate essays. Ratings from the public will be accepted until Winners are announced.
  - Public evaluators will have to submit their email address in order to rate essays. As with the Community evaluator, each Public evaluator can enter one score, 1-10, per essay.
  - Prizes will not be awarded directly on the basis of Public ratings, but these ratings may influence either Community evaluations or Expert judging.
- All decisions of the judges are final and the selection of Winners is at the sole and absolute discretion of FQXi.
- In the event of a tie, the expert judges will re-evaluate the tied essays and determine a Winner based upon the Evaluation Criteria.

#### ● PRIZES

- In addition to the cash prizes listed below, all First, Second, and Third Prize Winners will be invited to FQXi Membership, if the applicant is not already a Member, and Scientific American agrees to consider for publication adapted material from winning essays.
  - *First Prize (top ranked essay)*: US\$10,000
  - *Second Prize (ranks 2-3)*: US\$5000 each
  - *Third Prize (ranks 4-8)*: US\$2000 each
  - *Fourth Prize (ranks 9-18)*: US\$1000 each
  - *Judging Panel Discretionary Prize (at its discretion, the panel can decide to award up to 2 special commendation prizes for non-professional and/or non-academic entrants)*: US\$1000

## IV. TECHNICALITIES & LEGALITIES

**No purchase necessary to enter or win. A purchase does not increase your chance of winning.**

#### ● ELIGIBILITY

- The Contest is open to everybody except employees and consultants (including Contest judges) of the Sponsors (the Gruber Foundation, Submeta, and the Foundational Questions Institute), Scientific American, and each of their respective parents, subsidiaries, affiliates, advertising and promotion agencies (collectively, the "Contest Entities") and their family/household members (defined as parents, spouse, children, siblings, grandparents).

#### ● GUIDELINES

- No person is allowed to submit more than one essay to the Contest, regardless if he or she is entering individually or as part of a collaborative essay. If more than one is uploaded, all except the first will be disqualified. (On the rare occasion when a replacement is requested by FQXi, this will be handled outside of the usual submission system.) Collaborative essays written by more than one person can be submitted. If such an entry is awarded a Prize, it will be split equally among the collaborators.
  - Sponsors reserve the right to cancel or modify this Contest in the event that an insufficient number of entries are received that meet the minimum judging criteria.
  - This Contest shall be construed in accordance with U.S. law. All Federal, state and local laws and regulations apply.
  - Essays complying with the rules and satisfying minimal relevance and quality criteria will be automatically posted on the FQXi Community Forum website together with authors' names; after Prizes are awarded, contest Winners will be highlighted as such. The Sponsors reserve no copyrights to the submitted work; however, by submitting an entry, the applicant hereby grants to the Sponsors a worldwide, royalty free license to so post the essay, as well as use the essay for internal and advertising, marketing and promotional purposes of the Contest, in perpetuity, in any and all media now known or hereafter invented.
  - By submitting an essay, entrant represents and warrants that the essay is entrant's own creation and is 100% original work; is not subject to, and does not infringe upon, the rights of any third parties, including without limitation, copyright, trademark or privacy or publicity rights; and is not defamatory, obscene or otherwise illegal.
  - Entrants not complying with these requirements will be subject to disqualification. All entrants must have a valid email address. In case of dispute as to identity of entrant, entry will be declared made by the authorized account holder of the email address submitted at time of entry. "Authorized Account Holder" is defined as the natural person who is assigned an email address by an Internet access provider, online service provider, or other organization (e.g., business, educational, institution, etc.) responsible for assigning email addresses or the domain associated with the submitted email address. Any other attempted form of entry is prohibited; no automatic, programmed, robotic or similar means of entry are permitted. The Contest Entities are not responsible for technical, hardware, software, telephone or other communications malfunctions, errors or failures of any kind, lost or unavailable network connections, website, Internet, or ISP unavailability, unauthorized human intervention, traffic congestion, incomplete or inaccurate capture of entry information (regardless of cause) or failed, incomplete, garbled, jumbled or delayed computer transmissions which may limit one's ability to enter this Contest, including any injury or damage to participant's or any other person's computer relating to or resulting from participating in this Contest or downloading any materials in this Contest.
  - All Prizes are subject to United States Income Tax. Winners are required to furnish FQXi with appropriate tax forms for reporting the Prize, and applicable taxes may be withheld from the Prize.
  - Void where prohibited by law. FQXi reserves the right to refuse to award any Prize if doing so violates any applicable laws.
  - By submitting an entry in the contest, the author agrees to release, defend and hold harmless the Contest Entities and each of their respective directors, officers, employees, agents, volunteers, the Contest judges, and their affiliates, heirs, successors and assigns from and against, and waive any right to pursue, any and all claims of any nature whatsoever arising out of or in connection with the Contest, the selection of Winners, and the use of the submitted essay, the author's name, and biographical information as authorized under these Contest rules.
  - All decisions of the judges are final and the selection of Winners is at the sole and absolute discretion of FQXi.
- **NOTIFICATION & ACCEPTANCE**
    - Potential Winners will be notified by e-mail by November 30, 2012 and may be required to execute and return an Affidavit of Eligibility/Release/Prize Acceptance Form within fourteen (14) days of attempted notification. Each participant selected as a potential Winner must comply with all terms and conditions set forth in these Official Rules, and winning is contingent upon fulfilling all such requirements. If the Winner cannot be contacted within (7) calendar days of first notification attempt, if prize or prize notification is returned as undeliverable, if Winner rejects his/her prize or in the event of noncompliance with these Contest Official Rules, such prize will be forfeited and an alternate Winner will be selected from all remaining eligible entries. Upon prize forfeiture, no compensation will be given.
    - The names of Winners will be posted at [www.fqxi.org](http://www.fqxi.org) by December 7, 2012, and will also be available by sending a self-addressed stamped envelope FQXi Essay Contest Winner's List [PO Box 3022, New York, NY 10163], no later than February 28, 2013.
  - **GENERAL:** Acceptance of a prize constitutes permission by Winner to use of his/her name, photograph and/or likeness for advertising, publicity and promotion purposes without compensation (unless prohibited by law).
  - **CAUTION:** ANY ATTEMPT BY AN ENTRANT TO DELIBERATELY DAMAGE ANY WEB SITE OR

UNDERMINE THE LEGITIMATE OPERATION OF THE PROMOTION MAY BE A VIOLATION OF CRIMINAL AND CIVIL LAWS AND SHOULD SUCH AN ATTEMPT BE MADE, THE CONTEST ENTITIES RESERVE THE RIGHT TO SEEK DAMAGES FROM ANY SUCH PERSON TO THE FULLEST EXTENT PERMITTED BY LAW.

#### V. SPONSORS

- [Foundational Questions Institute](#) - PO Box 3022, New York, NY, 10163
- [Peter & Patricia Gruber Foundation](#) - 140 W 57th Street, Suite 10C, New York, NY 10019
- [Submeta](#) - 751 Laurel Street, #724, San Carlos, CA 94070

#### VI. MEDIA PARTNER

- [Scientific American](#) - 75 Varick Street, 9th Floor, New York, NY 10013-1917