Responsible Conducts of Research: Perspectives and Practices of NSFC

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Main contents

- Responsible Conduct of Research
- Problems Found
- NSFC's Standpoint and Principles
- Measures Adopted by NSFC
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Responsible Conduct of Research

Research ethics & Research integrity

- The protection of human and animal subjects in research
- Environmental friendliness and safety
- Avoidance of scientific misconduct
- Legal and reasonable use of research funds
- Prevention of financial conflicts of interest
Why imperative to normalize conduct of research?

Irresponsible conducts of research not only damage the reputation of the respondents, but bring shame on their home institutions, their fields of research, and even their home countries, which seriously undermine the public respect for science, knowledge, and talents.
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Problems Found

• **Common Research Misconducts**
  – Plagiarism
  – Fabrication
  – Falsification

• **New Research Misconducts**
  – Letting a third party to submit a paper and forge fake peer reviews
  – Online Purchase of Papers
  – Online Purchase of Grant Proposals
Plagiarism

Case 1: The respondent plagiarized the proposal assigned to him

- Alleged: The main framework and paragraphs of the respondent's proposal for NSFC General Program were plagiarized from an NSFC awarded proposal which was submitted by another applicant.

- Investigation: The respondent plagiarized the proposal assigned to him for mail review by NSFC in 2014.

- Administrative actions: The respondent was debarred from applying for NSFC grants for a period of 4 years and debarred from NSFC peer review capacity for a period of 7 years, and was criticized by a circulated letter of reprimand.
Fabrication

Case 2: A paper was retracted for fabricated contents

• Alleged: A paper labeling supported by NSFC award was retracted for fabricated contents.

• Investigation: the paper was retracted by the editorial office on the grounds that the first author forged one of the two images of the transgenic lines by the image software during the writing of the paper.

• Administrative actions: the respondent was debarred from applying for NSFC grants for a period of 6 years and was criticized by a circulated letter of reprimand.
Case 3: Fabricated data

- **Alleged:** Two papers belong to duplicate publications.
- **Investigation:** The data used in the papers was fabricated. It's verified that although the two papers focus on different material systems, one paper plagiarized many paragraphs from the other, with 2 identical figures being used in the two papers. And the respondent, both first author and correspondent author, admits that fabricated data was used in one of the two papers.
- **Administrative actions:** One respondent was debarred from applying for NSFC grants for a period of 5 years; another respondent was debarred from applying for NSFC programs for a period of 3 years and was criticized by a circulated letter of reprimand, with his grant awarded by NSFC being withdrawn and funds recovered.
Falsification

Case 4: Falsify research experience

- **Alleged:** The respondent defrauded for illegitimate benefits by use of other's academic achievements and committed egregious research misconducts.

- **Investigation:** The respondent committed serious frauds in applying for NSFC program by (1) falsely claiming participation in research projects funded by Singapore Ministry of Education Academic Research Fund and Singapore National Research Foundation; and (2) falsely claiming authorship of 8 high impact factor papers by another research with the same name with the respondent.

- **Administrative actions:** Debarred from applying for NSFC programs for a period of 7 years and was criticized by a circulated letter of reprimand, with his grant awarded by NSFC being withdrawn and funds recovered.
Letting a third party to submit a paper and forge fake peer reviews

Case 5: Fake peer reviews

• In 2015, such academic publishers as BioMed Central, Springer, Elsevier, and Nature successively retracted 117 SCI papers by Chinese authors due to counterfeiting peer reviews. And then in 2017, the journal Tumor Biology also pulled 107 papers from authors mostly based in China for the same reasons.

• NSFC conducted investigation into 60 retracted papers related to NSFC-funded projects and took strong measures against 134 respondents and 1 research institution by withdrawing 74 awarded grants and terminating peer review of 64 grant proposals.
Case 6: Purchase of Papers

• Alleged: A paper was plagiarized from other researcher's research findings.

• Investigation: The reported paper was purchased by the respondent online. The content was a total copy of other researcher's research findings, with other authors being listed without their informed consent and support of NSFC funded project being labeled without permit of the PI.

• Administrative actions: Debarred from applying for NSFC programs for a period of 7 years and was criticized by a circulated letter of reprimand.
Online Purchase of Grant Proposals

Case 7: Purchase Grant Proposals

• **Alleged:** Detected by NSFC similarity checking system that two applicants from different home institutions submitted two research proposals highly similar in content.

• **Investigation:** The two proposals were purchased by the two respondents online from the same seller, resulting in two highly similar proposals.

• **Administrative actions:** Debarred from applying for NSFC programs for a period of 4 years and were criticized by a circulated letter of reprimand.
Policy and Procedure Installation Lags behind Oversight Practice

For instance, currently there is no clear-cut penalties for such research misconducts such as online purchase of research papers and grant proposals, as well as forgery of peer reviews that cropped up in recent years.
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NSFC's Standpoint and Principles

NSFC's stance

- Zero Tolerance
- Combination of Punishment and Education
- Building healthy academic ecology
Zero Tolerance

- Respondents: 591
- Cases: 533
- Awarded grants: 239
- Research institutions: 35

(Data from 2013 - 2018)
Combination of Punishment and Education

- Publicity and education of research integrity and academic self-discipline.
- Combining punishment and education, tempering justice with mercy.
- Typical cases publicized on NSFC's homepage.
Combination of Punishment and Education

2018年查处的不端行为案件处理决定
2017年查处的不端行为案件处理决定
2015-2016年查处的不端行为案件处理决定
(1) 2015-2016年查处的科研不端行为案件处理决定
2013-2014年查处的不端行为案件处理决定
(1) 近期查处的科研不端行为典型案例及处理决定
(2) 国家自然科学基金项目申请与执行过程中科研不端行为案例处理决定通报
(3) 关于某单位的处理决定
2013年以前查处的不端行为案件处理决定
(1) 关于某单位的处理决定
(2) 关于某机构的处理决定
(3) 关于某高校的处理决定
(4) 关于某研究所在申请国家自然科学基金过程中学术不端行为的处理决定
(5) 关于某单位在申请国家自然科学基金项目中涉嫌抄袭的处理决定
(6) 关于某单位在研究过程中涉嫌抄袭的处理决定
(7) 关于某研究所在申请国家自然科学基金项目中涉嫌抄袭的处理决定
(8) 关于某研究所在研究过程中涉嫌抄袭的处理决定
Combination of Punishment and Education

- 案例一：伪造出生年月
- 案例二：全文抄袭剽窃他人申请书并造假
- 案例三：盗用他人名义申请并抄袭剽窃他人申请书
- 案例四：网上购买申请书并造假
- 案例五：多次伪造身份证号码
- 案例六：抄袭剽窃他人申请书并盗用他人研究成果
- 案例七：伪造国外博士学位
Building healthy academic ecology

- Applicants
- Research institutions
- Policy makers
- Review experts
- People from all walks of life
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Measures Adopted by NSFC

• Establishment of NSFC Supervision Committee
• Proactive Prevention of Irresponsible Conducts of Research
• Resolute Crack-Down on and Effective Prevention of Academic Pseudo-Innovation
• Implementation of an Evaluation System Conducive to Researchers‘ Devotion to Research and Innovation
Establishment of NSFC Supervision Committee

• In 1998, NSFC Supervision Committee was set up as the first academic supervision body under a government agency in charge of science and technology management.

Strengthening the research ethics and academic spirits in the science community of China, and propping up original scientific and technological innovation.
Proactive Prevention of Irresponsible Conducts of Research

Four-party commitment

Similarity checking of the research proposals

On-site supervision during panel review meetings.
Resolute Crack-Down on and Effective Prevention of Academic Pseudo-Innovation

• Academic pseudo-innovations,
  – overhyping research proposals
  – blindly following hot research topics
• Open up the green channel for researchers to properly implement and adjust grant use.
• Draw clear warning lines for malicious abuse and waste of research funds from the central government.
Implementation of an Evaluation System Conducive to Researchers' Devotion to Research and Innovation

• Strengthening academic self-discipline, reforming research evaluation, optimizing the institutional environment, standardizing the internet governance.

• Do away with the research evaluation mechanisms that are simply and solely based on published papers, academic titles, education background and awards of the researchers.

• A classified evaluation system should be set up to play an active role in building a sound research environment.
Highlights of NSFC’s Reform

Context

- New horizons in science and technology
  Embracing a new era of scientific innovation and revolution
- New national demands and global challenges
  Addressing grand challenges calls for scientific breakthroughs
- Paradigm shift in scientific research
  Changing with big data, openness, globalization
- Transdisciplinarity & convergence
  Advancing frontiers across boundaries in science and technology

Tasks

- Identify funding categories
  Advancing basic scientific principles and knowledge creation through research categorization
  - Funding creative and timely ideas – excellence in science
  - Focusing on the frontiers of science in unique ways – leading the cutting edges
  - Supporting application-driven basic research – enabling breakthroughs
  - Encouraging transdisciplinary leading-edge research – convergence
- Improve evaluation mechanisms
  Differentiated, accurate, fair, and efficient
  - Category-specific review
  - Peer review featuring “Responsibility + Credit + Contribution (RCC)”
  - AI-Assisted review management
- Optimize layout of research areas
  Advancing transdisciplinarity with convergence
  - In accordance with the inherent logic and landscape of the knowledge system
  - Integration of the knowledge system and application

Goals

Science Funding System in a New Paradigm
- Originality-prioritized
- Transdisciplinary

Logic-based layout
- Knowledge & application unified
- RCC-valued Review

Open & Global

Excellence in Science

Roadmap

Phase I (2018-2022)
- Full implementation of funding categories
- Improvement of evaluation mechanisms
- Formulation of the layout of research areas

Phase II (2023-2027)
Accomplishment of all the reform tasks

NSFC
National Natural Science Foundation of China
Thank you for your attention!