欧洲科学基金会
促进欧洲科研诚信

中国社会科学评价研究院
科研诚信管理办公室
2021 年 8 月 编印

前　言

在一个需要在科学、社会和政策制定者之间建立信任的时代，研究活动应在最高的道德考虑范围内进行，应以公开和透明的方式查明和处理不当行为。研究的质量完全基于最高水平的诚信。因此，科研诚信问题日益引起了全球各国和国际组织的关注。

欧洲科学基金会（ESF）是一个独立的非政府组织，其成员包括来自 30 个国家的 79 个国家资助机构、研究执行机构、科学院和学术团体。自 2000 年以来，ESF 一直致力于促进研究诚信，在 2008 年他们成立了 ESF 科研诚信成员组织论坛（ESF Member Organisation Forum on Research Integrity），目的是作为一个平台交流良好实践信息，以支持和鼓励那些尚未得到适当支持的机构发展这类机构，向他人学习，并在各自的团体中发起辩论，而本次编译的《促进欧洲科研诚信》的报告正是基于 ESF 成员组织论坛的工作成果。本书主要包含了欧洲科研诚信行为准则、定义和实施科研诚信意识和结构、科研诚信治理框架的范围、治理框架核心要素及科研诚信治理模型等内容，在遵守各国国家和欧洲的立法框架的前提下，补充了现有的道德规范，它的目的不是要取代现有的国家或学术指导方针，而是代表一项全欧洲范围的协议，为研究界制定一套原则和优先事项，并促进全球科研诚信行为规范的发展。

它山之石可以攻玉，为了进一步贯彻落实中共中央办公厅、国务院办公厅印发的《关于进一步加强科研诚信建设的若干意见》和哲学社会

科学科研诚信建设联席会议成员单位印发的《哲学社会科学科研诚信建设实施办法》等文件精神，不断借鉴国外在科研诚信建设方面的做法经验，科研诚信管理办公室编译了欧洲科学基金会的《促进欧洲科研诚信》报告，以便在科研诚信建设和管理工作中学习和参考。

在编译过程中，中国社会科学院评价研究院院务会对此次编译工作进行了策划和指导，钟慧、张晨露、李钰莹、王智林、李欣负责收集资料和编译工作。由于我们的能力有限，翻译过程中的错漏或不当之处，还请大家批评指正并谅解。

中国社会科学评价研究院

科研诚信管理办公室

2021 年 8 月

欧洲科学基金会

欧洲科学基金会（ESF）成立于 1974 年，总部设在斯特拉斯堡，是一个独立的非政府组织，其成员包括来自 30 个国家的 79 个国家资助机构、研究执行机构、科学院和学术团体。ESF 自成立以来，聚集了许多跨学科的组织，为欧洲的跨境合作创造了一个共同的平台。ESF 的优势在于其成员的影响力，同时它能够将欧洲科学的不同领域汇集在一起以迎接未来的挑战。

ESF 致力于促进欧洲范围内在科学研究、研究资助和科学政策方面的合作。ESF 通过其活动和工具为全球范围内的科学作出了重大贡献，其涵盖的科学领域包括人文科学、生命、地球和环境科学、医学科学、物理和工程科学、社会科学、海洋科学等。

成员组织论坛

ESF 成员组织论坛是一个面向产出、与问题相关的论坛，成员组织可在适当情况下与其他组织进行交流信息和经验，并在科学政策方面制定联合行动。论坛讨论的典型主题范畴涉及:针对欧洲性质的研究问题进行联合战略开发和战略合作；发展科学管理方面的最佳实践和实践交流，使所有欧洲组织，特别是新成立的研究组织受益；在欧洲背景下统一协调成员国组织的国家计划和政策。

European Science Foundation

Founded in 1974 and headquartered in Strasbourg, the European Science Foundation (ESF) is an independent, non–governmental organisation , the members of which are 79 national funding agencies, research performing agencies, academies and learned societies from 30 countries. Since its inception,it has assembled a host of organisations that span all disciplines of science, to create a common platform for cross–border cooperation in Europe. The strength of ESF lies in the influential membership and in its ability to bring together the different domains of European science in order to meet the challenges of the future.

ESF is dedicated to promoting collaboration in scientific research, funding of research and science policy across Europe. Through its activities and instruments ESF has made major contributions to science in a global context. The scientific areas covered by the ESF include the Humanities； Life,Earth and Environmental Sciences； Medical Sciences； Physical and Engineering Sciences； Social Sciences； Marine Sciences, etc.

Member Organisation Forum

An ESF Member Organisation Forum is an output–oriented, issue–related venue for the Member Organisations, involving other organisations as appropriate, to exchange information and experiences and develop joint actions in science policy. Typical subjects areas discussed in the Fora are related to: Joint strategy development and strategic cooperation with regard to research issues of a European nature； Development of best practices and exchange of practices on science management, to benefit all European organisations and especially newly established research organisations ； Harmonisation of coordination by MOs of national programmes and policies in a European context.

目　录

欧洲科学基金会促进欧洲科研诚信

一、介绍说明.....1

二、执行概要.....4

2.1 研究背景与理论依据.....4

2.2 欧洲科研诚信行为准则.....6

2.3 定义和实施科研诚信意识和结构.....10

2.4 需要进一步的科研诚信证据.....16

2.5 下一步：对未来的建议.....17

三、欧洲科研诚信行为准则.....18

3.1 前言.....18

3.2 行为准则.....19

3.3 背景与说明.....22

3.4 良好操作规则指南.....29

3.5 国际合作研究.....32

四、实现科研诚信：研究诚信治理框架的要素.....34

4.1 科研诚信治理框架的范围.....34

4.2 科研诚信治理框架的核心要素.....35

4.3 科研诚信治理模型.....42

4.4 选定的全国性研究.....46

4.5 结论.....48

五、结论和建议.....49

Fostering Research Integrity in Europe

1. Introductory Note..... 51
2. Executive Summary..... 54
2.1 Background and Rationale..... 54
2.2 European Code of Conduct for Research Integrity..... 56
2.3 Defining and Implementing Awareness and Structures for Research Integrity..... 61
2.4 Need for Further Evidence on Research Integrity..... 68
2.5 Next Steps: recommendations for the future..... 69
3. The European Code of Conduct for Research Integrity..... 70
3.1 Preface..... 70
3.2 The Code of Conduct..... 72
3.3 Background and Elucidation..... 75
3.4 Guidelines for Good Practice Rules..... 83
3.5 International Collaborative Research..... 86
4. Implementing Research Integrity: Elements of a framework for research integrity governance..... 89
4.1 Scope of a Research Integrity Governance Framework..... 89
4.2 Core Elements of a Framework for Research Integrity Governance..... 90
4.3 Models of Research Integrity Governance..... 97
4.4 Selected National Research Integrity Governance Structures..... 102
4.5 Conclusion..... 105
5. Conclusions and Recommendations..... 106

欧洲科学基金会促进欧洲科研诚信

一、介绍说明

越来越多的欧洲研究人员正在跨国界开展联合研究活动。对所采用的伦理标准的任何怀疑或不信任都会对我们科学理解的基础产生疑问。由于整个欧洲大陆的研究结构、资助体系和传统的多样化，对科研诚信的要求有一个共同的理解是至关重要的。《欧洲研究诚信行为准则》就是为了满足这一要求，通过欧洲科学基金会和所有欧洲科学院的成员一同制定的。它在 2010 年 7 月在新加坡举行的第二届世界科研诚信会议上受高度重视，认为它是国际协调的一个范例，为建立关于科研诚信的全球共识奠定了基础。

欧洲科学基金会（ESF）成员组织科研诚信论坛（MO 论坛）是在 2007 年 9 月在里斯本的由 ESF 与美国科研诚信办公室共同举行的第一届世界科研诚信会议之后成立的，毋庸置疑，必须在欧洲层面对所有科研诚信问题进行大量的后续工作。

MO 论坛的目标和宗旨是:

目的：

创建一个以产出为导向、将 ESF 成员组织和其他在促进和保护科研诚信方面发挥关键作用的组织(不包括现阶段研究人员在研究合同和伦理方面的独立性相关问题)团结在一起的网络，解决科研诚信的个体化问题和结构性科学政策方面的问题（至少在 ESF 成员组织所关注的范围内）。

宗旨：

• 作为一个平台，让不同的组织展示彼此的方法，讨论各自的优缺点（如果有的话），从而成为交流良好做法的工具;

• 支持和鼓励尚未建立适当结构（但有兴趣发展它们）的组织学习他人的经验，并在各自的社区中就适当的模式展开辩论;

• 向 2010 年 7 月在新加坡举行的第二届世界科研诚信大会发表欧洲的意见。

范围和结构：

继 2007 年 9 月由 ESF 和 ORI 在里斯本共同举行的第一届世界科研诚信会议之后，ESF 发布了其欧洲国家科研诚信结构调查报告——“诚信管家”[欧洲科学基金会（2008）：诚信管家：促进和保障欧洲良好研究实践的制度方法]。此后，欧洲科学基金于 2008 年 11 月 17-18 日在马德里举办了第一个研讨会“从原则到实践”，成立了欧洲科学基金成员组织研究诚信论坛。会议的目的是为成员组织的人员提供一个平台，让他们就良好做法交流信息，支持和鼓励那些没有适当结构的组织发展这种结构，向其他组织学习，并在各自的社区内展开辩论，并向第二届世界科研诚信大会发表欧洲的意见。该次会议的结果是设立了四个工作组，负责下列领域:

工作组 1“提高意识和分享信息”（主席：Sonia Ftacnikova, SK）：让所有利益相关者参与，提高认识并分享良好做法，并建立平台，就促进和保障科研诚信的各种方法(包括在教育和培训方面促进科研诚信的努力）不断交流信息;

工作组 2“行为准则”（主席：Pieter Drenth, NL）：工作组 2 被要求设计和制订一份欧洲行为守则，作为国家行为守则的模板，其中确定负责任的研究中应追求的核心价值和应遵守的规范，并可作为国家或机构行为守则（至少在欧洲）的模板;

工作组 3“建立国家结构”（主席：Maura Hiney, IE）：建立国家和制度结构的清单，以促进良好的研究实践和处理研究不端行为。尚未建立机制来促进和维护良好的科研诚信的国家（和机构）可以从其他已经尝试建立结构的国家的经验中获益;

工作组 4“科研诚信研究”（主席：Livia Puljak, HR）：为了了解研究不端行为的流行及其原因，就研究诚信需要的研究类型提出建议，探索解决这个问题的最佳方法，更好地理解研究不端行为，以帮助制定基于证据的政策。

MO 论坛举办了四个研讨会（2008 年 11 月在马德里；2009 年 10 月在斯特拉斯堡举行，与欧洲科学基金会科研诚信办公室关于良好研究实践和研究诚信培训的会议同时举行; 2010 年 3 月在斯普利特; 2010 年 11 月在罗马）。许多 MO 论坛的成员还参加了 2010 年 7 月在新加坡举行的第二届世界科研诚信大会，ESF 再次成为该会议的赞助商。

四个工作组设想将把它们的结论纳入一项全面战略，以便在国家以及在更广泛的欧洲范围内保障科学研究和实践诚信。这四个工作组所制定的工作成果构成了本报告的基础。

MO 论坛的执行报告于 2010 年 6 月发表，并在新加坡举行的世界会议上提交，作为在许多国家、许多机构和学科之间发展协调的研究诚信方法的罕见尝试，这是一个重要的投入。它还包括欧洲研究诚信行为准则。

最终结果，包括在罗马会议（2010 年 11 月）上制定的一些建议，已于 2010 年 11 月 17 日在斯特拉斯堡举行的 ESF 年度大会上提交。

二、执行概要

2.1 研究背景与理论依据

科学和学术研究是一个共享的事业，旨在发现和传播新知识。对这一追求中所采用的伦理标准的任何怀疑或不信任，都可能在物质上对我们科学理解的基础提出疑问。本文件提请注意科学家及其机构（雇主、资助者等）防止这种有害发展的必要自律机制。

由于同行的压力，以及对新知识的成功探索所涉及的重大利害关系，研究工作竞争十分激烈。承认研究人员行为中可能存在的缺陷是必要的，但是放弃研究诚信的原则有可能破坏将科学新知识的创造与社会财富和福利的创造联系起来的整个链条。

科学家和学者可能犯错，研究可能不完整，数据可能误导，但这种共享事业建立在诚实努力、公平报道和大学诚信的假设之上。有一些故意不诚实的公然案例，但大多数研究人员倾向于认为这是罕见的事件。这是因为人们相信，同行评议和大学风气，挑战的过程和质疑的实践，迟早会揭示真相。正如阿瑟·c·克拉克所说："从长远来看，科学中没有秘密。世间的真相是无法掩盖的。"本报告旨在加强这种精神。

但也有一些令人不安的事实需要面对。目前全世界的研究人员已达数百万人。美国科研诚信办公室（US Office of Research Integrity）顾问尼古拉斯·h·斯滕尼克（Nicholas H. Steneck）表示，研究不当行为的案例可能多达数万起。"研究表明，在 3 到 5 年的时间里，每 100 名研究人员中就有一人有严重的不当行为。"

除伪造、篡改、剽窃外，还有许多其他不良行为值得注意。有些可能会产生严重的法律或道德后果；其他的可能会制造麻烦、不满或程序冲突。其中许多可能会破坏公众对研究和科学的信任。

“研究不当行为”一词意味着许多事情，包括对作为研究对象或参与者的人、动物或物体不够关心；违反机密性、违反协议、导致重大错误和涉及利益冲突或盗用想法的发表不当行为的那种疏忽。许多这些不可接受的研究实践在欧洲科研诚信行为规范中得到了处理。斯滕尼克说：“如今新的研究人员并没有像专业人士那样接受处理挑战和复杂问题的常规训练，这种情况需要得到解决。”

欧洲需要解决这一问题，因为欧洲各国的研究结构、资助系统和传统可能是多种多样的，但研究人员已经越来越多地开始合作，协调倡议，并在整个欧洲范围内建立伙伴关系。因此，除了相互尊重国家多样性之外，必须有对科研诚信的要求的共同的理解。这里提出的欧洲科研诚信行为准则应该作为研究范围的所有部分的参考点。在没有国家规定的地区，它可以作为制定的基础，可以补充现有的道德守则，在某些情况下可能适合加强或取代已经在执行的道德守则。它具有足够的包容性，可以很容易地遵守国家和欧洲的立法框架。对科研诚信的关注首先始于个人的责任，但同时也把责任放在了研究机构、研究资助者、学术团体、学院、编辑和私营部门支持的研究工作上。

在欧洲，在提高科研诚信意识和为研究界及其机构提供指导方针方面相对较早的努力可以追溯到欧洲科学基金会的《关于研究和学术良好科学实践的科学政策简报》（2000 年）。以及欧洲科学院（ALLEA）的科学诚信备忘录（2003 年）。全球努力包括经合组织确保科研诚信和防止不当行为最佳做法的全球科学论坛的工作，该论坛侧重于与国际合作有关的问题。第一届世界科研诚信会议于 2007 年在里斯本举行。它是由 ESF 和美国科研诚信办公室发起的，得到了欧盟主席和欧盟委员会（European Commission）的支持。随后建立了一个 ESF 成员组织论坛来推进这些问题，本报告是在这一背景下调查和辩论的结果。它建立在 2008 年发布的 ESF 调查（促进和保障欧洲良好研究实践的诚信制

度方法的管理者）的基础上，该调查强调了关键问题和教育培训的必要性，以使研究界更好地处理所提出的问题。

该文件是在2010年7月21日至24日在新加坡举行的第二届世界科研诚信大会上提出的。从根本上说，它的目标是在原则上达成协议，并认识到程序的兼容性对于欧洲研究领域的发展和在全球研究合作中发挥其作用是必要的。

2.2 欧洲科研诚信行为准则

该规范通过一系列涉及ESF和欧洲科学院的研讨会开发，论述了涉及自然、社会科学和人文学科系统研究的适当行为和原则性实践。它是自律的准则，而不是一套法律。它的目的不是取代现有的国家或学术指导方针，而是代表整个欧洲就研究界的一套原则和优先事项达成的协议。

2.2.1 守则

研究人员、公共和私人研究机构、大学和资助机构必须遵守和促进科学和学术研究的诚信原则。

这些原则包括:

- 诚实的沟通;
- 执行研究的可靠性;
- 客观性;
- 公正和独立;
- 开放性和可达性;
- 注意义务;
- 提供推荐信和授信的公平性;
- 对未来科学家和研究人员的责任。

大学、研究机构和其他所有雇用研究人员的机构，以及资助其科学

工作的机构和组织，都有责任确保一种主流的科研诚信文化。这包括明确的政策和程序，对研究人员的培训和指导，以及确保意识到并应用高标准的强有力的管理方法，以及尽早发现并尽可能防止任何违规行为。

捏造、篡改和故意遗漏不受欢迎的数据都严重违反了研究风气。剽窃违反了相对于其他研究人员的负责任的行为规则，并且间接地对科学有害。未能妥善处理此类不当行为的机构也有罪。可信的指控总是应该被调查。轻罪总是应该受到谴责和纠正。

对指控的调查应符合国内法和自然正义。它应该是公平的、迅速的，并导致适当的结果和制裁。在可能的情况下应遵守保密原则，必要时应采取适当的行动。调查应进行到底，直至得出结论，即使涉嫌违约的人已离开该机构。

在国际合作中，合作伙伴（个人和机构）应事先同意一同在尊重参与者国家的法律和主权的同时，调查可疑的偏离科研诚信的行为。在一个跨国、跨部门和跨学科研究日益增多的世界里，经合组织全球科学论坛关于确保科学诚信和防止不当行为最佳实践的工作可以在这方面提供有用的指导。

2.2.2. 科研诚信的原则

这需要诚实地提出目标和意图，报告方法和程序，以及传达解释。研究必须是可靠的，其交流必须公平和充分。客观性要求能够证明的事实，以及数据处理的透明度。研究者应该独立和公正，与其他研究者和公众的交流应该是开放和诚实的。所有研究人员都有责任照顾他们所研究的人类、动物、环境或物体。他们必须在提供参考资料和赞扬他人的工作时表现出公平，并且必须在监督年轻科学家和学者方面表现出对后代的责任。

2.2.3. 不端行为

研究不端对知识有害。它可能误导其他研究人员，它可能威胁个人

或社会——例如，如果它成为不安全药物或不明智立法的基础——并且，通过破坏公众的信任，它可能导致对研究施加的漠视或不受欢迎的限制。

研究不当行为可能以多种形式出现:

- 捏造包括编造结果，并将其记录下来，就像它们是真实的一样;
- 篡改包括操纵研究过程或更改或遗漏数据;
- 剽窃是指没有给予适当的说明而盗用他人的材料;
- 其他形式的不当行为包括未能满足明确的道德和法律要求，如歪曲利益、违反机密、缺乏知情同意和滥用研究对象或材料。不当行为还包括对侵权行为处理不当，如试图掩盖不当行为和对举报人的报复;
- 轻微的不端行为可能不会导致正式调查，但鉴于其可能发生的频率，同样具有破坏性，应该由教师和导师纠正。

回应必须与不当行为的严重性相称：作为一个规则，它必须证明不当行为是故意、有目的的或不计后果地犯下的。证明必须建立在大量的证据基础上。研究不端行为不应包括诚实的错误或意见分歧。一些不当行为，如恐吓学生、滥用资金和其他已经受到普遍法律和社会惩罚的行为，也是不可接受的，但不是“研究不当行为”，因为它不影响研究记录本身的诚信。

2.2.4 良好的研究实践

在遵循良好实践方面还有其他失误——不正确的程序、错误的数据管理等等——这些都可能影响公众对科学的信任。这些也应该被研究界认真对待。因此，数据实践应保存原始数据，并使同事能够访问这些数据。偏离研究程序的因素包括对人类、动物或文化物品不够关心；违反协议；未取得知情同意；违反保密等。要求或授予不应得的作者或否认应得的作者是不可接受的。其他与发表相关的失误可能包括重复发表、对贡献者或赞助商有损害或认可不足。评论家和编辑也应该保持他们的

独立性，宣布任何利益冲突，并警惕个人偏见和竞争。对作者身份进行不正当地声称和伪造。剽窃思想的编辑或评论家就是剽窃。给参与研究的人造成痛苦或压力，或在没有知情同意的情况下使他们暴露在危险中，在道德上是不可接受的。

虽然诚信原则及其违反原则具有普遍性，但一些良好做法的规则可能受文化差异的影响，应成为一套国家或机构指导方针的一部分。这些不能轻易地纳入一项普遍的行为准则。然而，国家良好研究实践指南应考虑以下几点：

1. 数据：所有主要和次要数据应以安全、可访问的形式存储，记录和存档相当长的一段时间。它应该交给同事们使用。研究人员与他人合作和交谈的自由应得到保障。

2. 程序：所有研究的设计和实施都应避免疏忽、匆忙、粗心和漫不经心。研究人员应该努力实现他们在申请资助时做出的承诺。他们应该尽量减少对环境的影响，并有效地利用资源。应让客户或赞助商了解研究人员的法律和道德义务，以及发表论文的重要性。在合法需要的情况下，研究人员应尊重数据的保密性。研究人员应适当对所获得的资助或资金负责。

3. 责任：所有的研究对象——人类、动物或非生物——都应该被尊重和小心地对待。一个社区或合作者的健康、安全或福利不应受到损害。研究人员应该对他们的研究对象敏感。控制人体实验的规程不能被违反。只有在其他方法被证明是不充分的情况下，动物才应该被用于研究。这种研究的预期收益必须超过对动物造成的伤害或痛苦。

4. 发表：除非考虑到知识产权问题，应尽早以公开、透明和准确的方式发表研究结果。所有作者，除非另有规定，应完全负责出版的内容。代笔作者和荣誉作者是不接受的。建立作者顺序的标准应该得到所有人的同意，理想情况下是在项目开始时。合作者和助手的贡献应得到

认可，并得到他们的许可。所有作者应声明任何利益冲突。别人的智力贡献应该得到承认和正确的引用。在与公众和大众媒体的沟通中应保持诚实和准确。应该承认对研究的财政和其他支持。

5. 编辑责任：有潜在利益冲突的编辑或审稿人应退出某一出版物，或向读者披露该冲突。审稿人应提供准确、客观、充分和合理的评估，并保持保密。未经允许，审稿人不得在投稿稿中使用材料。审核拨款申请、或个人申请任命、晋升或其他认可的审查员，应遵守同样的指引。

处理研究不当行为的主要责任掌握在那些雇佣研究人员的人手中。这些机构应设有常设或特设委员会，处理有关不当行为的指控。科学院和其他类似机构应该制定一套行为准则，包括处理不当行为的规则，并期望成员遵守。参与国际合作的研究人员应同意本文件中制定的科研诚信标准，并在适当的情况下，采用一份全新编纂的或使用经济合作与发展组织全球科学论坛草稿编纂的正式的合作协议。

2.3 定义和实施科研诚信意识和结构

2.3.1 促进科研诚信

上述定义的所有机构都有义务提高对良好研究规范的认识并分享信息，以促进研究诚信，这样做符合每个人的利益。严谨、尊重和负责的研究是卓越的组成部分。所以科研诚信和研究卓越是互补的目标。

科学院促进科学和学术的质量和兴趣。作为一个机构，国家科学院是独立和权威的，并且是那些能够促进和发展，可能也能够实施旨在确保给定的国家科学体系中的科学诚信的措施的机构之一。

大学和从事研究的组织在鼓励良好的研究实践和防止不可接受的行为，以及处理针对其工作人员的研究不当行为指控方面发挥着作用。他们负有培养青年研究人员和学生良好研究公民意识的特殊责任。

资助机构有义务促进良好的研究实践，并确保科研诚信。他们有

权力与研究人员和研究雇主坚持这些原则，以及处理不当行为的政策。科学实践和同行评议的基本原则保障了科研中不可或缺的相互信任。

科学期刊和杂志编辑有兴趣在出版前发现剽窃、捏造、篡改和其他欺诈行为。因此，他们也必须促进最佳实践，并帮助发现不当行为。

正如 ESF 调查《诚信管家》所显示的那样，欧洲各国在科研诚信方面的情况差异很大。为了这份文件，各种机构（资助机构、学院、大学和学院、期刊、专业组织等）报告了他们的经验和问题。

成功的方法：

2010 年，ESF 的 MO 论坛对推广良好研究行为的尝试进行了调查，发现了一些成功的方法：

- 制作和传播关于研究诚信的文章、书籍、小册子；
- 制定和推广关于良好研究实践和研究不当行为指控调查的指导方针；
- 建立网站和门户网站作为进一步学习和教学的资源；
- 在国家或机构层面举办关于研究诚信的研讨会、会议、学术研讨会等，以发起辩论；
- 建立适当的机构框架，包括伦理委员会、科研诚信局（在机构和国家层面）；
- 为高级博士学生和其他员工引入培训计划；
- 收集其他地方的最佳实践证据（调查等）；
- 调查以监督良好研究行为和培训计划的实施。

监控程序：

参与这项工作的机构还报告了一些可采取的有用措施，以监测对科研诚信和良好研究做法基本规则的遵守情况。这些包括：

- 检查大学和研究所的基础设施和政策（调查官、科研诚信委员会、

处理指控的程序、告密者的保护、指导、研究团体的精神，等等）；

• 要求大学和研究所在其年度报告中包含科研诚信，以及收到和解决的指控数量；

• 要求科学期刊每年报告不端行为或所谓的不当行为；

• 分析一般媒体报道的案件，要求被指控研究人员的雇主提供进一步信息；

• 对学生、科学家和科学管理人员的意识抽样调查；

• 科研诚信网页和在线资源的点击率度量；

• 检查完成在线培训的参与者人数和科研诚信领域的培训课程数量；

• 检查辅导计划的可行性。

困难

即使主题已被确定为相关的，个人和机构也始终如一地报告在处理研究诚信的问题时遇到的一些困难。它们包括：

• 缺乏明确的定义，特别是在不可接受的研究实践方面；

• 对科研诚信与一般科学伦理的区别和关系的误解；

• 先入之见，认为行为不端的案例是罕见和例外的；

• 相信同行评审过程本身可以识别不当行为；

• 在处理不当研究指控的需要和减少学术自由的危险之间，不确定孰优孰劣；

• 主张对良好的研究实践和研究诚信的积极态度将增加研究人员的管理负担。

在更普遍的层面上，据报道，人们担心缺乏资源来建立有效的国家框架，以处理研究不当行为，而且各种不同的利益攸关方（国家和区域政府、大学和研究组织等），由于采取的办法并不总是一致，但职责重叠，因此难以实现全面的全国性办法。

2.3.2 制定科研诚信治理框架

科研诚信治理框架的核心要素:

全球认可的指导方针，如由 ESF、欧洲科学院和经合组织全球科学论坛制定的方针，可以制定强有力的基本原则。制定一个国家相关的科研诚信治理框架的挑战是确保全球原则能够转化为国家政策和实践。每个国家的起点将有所不同，但仍有加强所有现有体系的空间。所有的系统都需要:

• 一份授权: 一个明确和权威的国家声明、章程或立法支持，以支持科研诚信治理结构。在制定这一任务时，各国可以借鉴其他国家的经验;

• 在地方和国家层面上采取公平和透明的程序，在预防和制裁之间保持平衡，无论采取什么程序，重点都是预防;

• 在地方和国家层面明确分配预防、调查和实施制裁的角色和责任。

此外，在操作或功能层面应适用的一些核心要求包括:

a）将良好研究实践和科研诚信原则嵌入研究文化的核心要求包括:

• 各级预防、教育和认识机制。这些包括但不限于，从科学或学术生涯的开始就进行良好研究行为培训，并使科研诚信成为监督和指导的一个组成部分;

• 强有力的数据管理程序，数据收集和集中存储方面的良好实践培训;

• 为研究人员和其他利益攸关方提供的指南，以及关于培训材料、指南和不当行为情景的信息共享工具;

• 商定共享案例信息的程序，以建立本地、国家和整个欧洲的研究不当行为数据体系，并改进当前的程序。

b）被指控有不当行为或研究行为不当的个人和机构的核心要求包括:

• 法律健全的调查程序，并规定了保护个人的最低法律标准;

• 明确的指控程序，包括就谁可以提出问题以及他们如何提出（匿名、具名）、提出问题的形式（口头、书面）以及应向谁提出问题达成协议;

• 在开始时就不当行为调查的透明度和/或保密性达成协议，明确何时向第三方（媒体、国家监督机构、资助者）披露结果以及在什么情况下披露结果;

• 关于上诉程序和上诉类型的决定，例如，关于调查的科学或程序因素的决定;

• 可实施的制裁决定，适用于与良好研究行为法规背离的程度;

• 对举报人的保护，如有必要可通过法律予以保护，因为科研诚信治理结构的成功取决于他们向前迈进的意愿。

科研诚信治理模式

在欧洲和其他地方，科研诚信治理的广泛方法包括自我监管和依赖同行评审；制度层面的治理；由研究资助机构、专业协会和学术团体提供监督；国家监督或更正式的治理结构。大多数欧洲国家的情况是复杂的，各机构和国家机构同时采取了一种以上的办法。

每个机构、机构、社会或国家面临的挑战是一方面平衡个人和地方的责任和结构，另一方面平衡国家科研诚信协调或治理。在没有科研诚信治理或监督的地方，或在没有国家协调的严格机构或地方一级进行治理的地方，这些挑战是严峻的。相反，可以观察到，当一个协调的和全国一致的系统出现时，治理结构的稳健性增加了。

由国家机构推动的科研诚信治理

研究资助机构、专业协会和学术团体的监督很可能被研究界接受，因为它们提供了协调一致的指导方针、程序的独立性和可信性。这种监督还可以促进上诉机制，使案件更难隐藏。然而，还有一些困难。其中许多国家机构将没有监测遵守情况的资源。机构可能会抵制外部监督。

这种监督可能不包括公共活动和商业活动。无论由谁提供区域或国家监督，实施的责任仍将由地方承担，伴随而来的是上述挑战和风险。

国家科研诚信治理结构

适当组成的国家科研诚信治理结构可以通过研究资助机构、专业协会或学术团体的自我监管或监督/监管来解决许多问题。国家办事处可以在公共和私营研究部门提供一致的建议、支持和指导方针。它们还可以为调查程序提供真正的独立以及在获取和处理案件方面的平等，从而减少利益冲突的可能性。重要的是，国家常务委员会可以培养专业能力。此外，他们处理良好研究行为和调查的权力是显而易见的。这样的科研诚信治理还可以促进国际合作和相互学习。新出现的框架应充分利用与其他国家办事处建立联系的机会：目前，欧洲科研诚信办公室网络提供了这样一个平台。

采用科研诚信治理结构的步骤

所有国家和机构都需要优先考虑科学和学术的好名声，尽管在某些情况下并没有这样做。研究界必须准备好应对不当行为的怀疑。在国际层面，ESF、欧洲科学院、经济合作与发展组织等组织在促进科研诚信和确定普遍可接受的指导方针方面发挥着重要作用，国家机构和政府可以根据这些指导方针建立健全的科研诚信治理结构。这些指导方针还应与委员会和其他专业编辑机构的指导方针相联系，以便对学术制度施加外部压力，推动变革。其目的是确保整个学术体系，从知识生产到出版，遵循同样的高标准，并有一个明确的参考点，在任何必要的地方发起变革。此外，那些愿意并能够推动本国变革的国家领军人物的作用不可低估。

ESF 成员组织论坛的审议表明，没有“一刀切”的科研诚信治理框架可以适用于所有欧洲国家。在不当行为的定义和为确保国家研究系统的诚信而采取的预防措施方面，国家和机构之间存在着多样性。

美国、丹麦、挪威、芬兰、澳大利亚、加拿大和德国等少数国家已建立了国家科研诚信程序或指南，并有国家办事处监督其申请。这些办事处的规模和权威各不相同，其中美国和北欧国家的结构最为发达。

每个国家都必须发展适合其规模、资源和研究基础设施的自己的科研诚信治理结构。尽管如此，为了创建一个可行的科研诚信治理结构，必须包含一些核心需求。这种共性可能有助于国家和地方系统的整合，并传播“好科学”的理念。分享经验在地方、国家和国际上都极为重要。汇集国内和国际经验，将建立起一个关于整个欧洲的科研不端行为的数据体系。欧洲科研诚信办公室网络（ENRIO）等网络为分享经验和确定围绕科研诚信治理的问题提供了重要论坛。

综上所述，推动良好研究行为与查处不当行为之间要取得平衡。没有一个单一的框架将适用于全欧洲，但本节试图确定应该出现在一个可行的科研诚信治理结构的要素。

2.4 需要进一步的科研诚信证据

很少有人知道导致研究不端行为的原因和行为意义，也很少有人知道确保研究中高标准诚信的成功方法。目前缺乏关于全球和欧洲科研不端行为发生率的数据。应该鼓励采取各种方法。

促进科研诚信的研究

预防研究不当行为是最终目标。学术研究是了解不当行为和不当研究实践及其背后原因的工具。与此同时，还需要鼓励发表关于政策问题和科学行为的这类研究。研究和文献都将引起利益相关者的更多关注。为了防止科研不端行为，我们需要更多地了解科研诚信。资助机构、政治家、学院、大学、ESF、欧洲科研诚信办公室网络、期刊编辑和研究人员本身都应该参与促进研究诚信的研究。许多欧洲国家有共同的价值

观，但在提供建议时也应尊重当地的文化和价值观。

在欧洲层面，欧洲委员会可以在“科学与社会”领域包含这种研究，欧洲科学基金会也可以在其网络方案中促进包括科研诚信的研究系统的研究。继续支持世界科研诚信会议尤其重要。

2.5 下一步：对未来的建议

• 推广欧洲标准- ESF 国际准则。这不仅应包括伪造、篡改和剽窃，还应包括良好研究行为和更困难的利益冲突、虚假陈述、关照义务和知情同意等领域。准则和指南是这种方法的基本组成部分，应该得到 ESF 及其成员组织的认可。

• ESF 项目领导人应同意遵守 ESF 指导方针。这将是资助协议的一个组成部分。这将有助于引入欧洲标准，特别是对于那些还没有自己的国家指南的国家。ESF 的建议也应被其成员组织采纳，与欧盟委员会的讨论应旨在看到这些建议在其研究活动（包括框架计划、欧洲研究理事会和欧洲理工学院）中同样被采纳。

• 应考虑让 ESF 充当欧洲信息交换所 ，提供有关可用资源的信息。它应提供一个欧洲数据库（网页、在线培训、案例研究材料等），涉及如出版和作者实践、指导、数据管理等科研诚信的组成部分。共同的办法可以根据各国情况进行调整。

• 每五年重复一次《诚信管家》修订版的调查和分析。科研诚信改进的许多方面需要进行比较。ESF 代表了许多国家的学院、资助和执行研究机构，是未来讨论的好地方。

• 也可以考虑为科研诚信方面的协作工作提供有限资金的可能性，以及鼓励成员组织就科研诚信主题引入资金的可能性。

• 协调欧洲各国防止不当行为和应对欺诈性出版物的程序是一个需要进一步考虑的问题。

继续支持世界科研诚信会议

第一届世界科研诚信大会在提高人们对这一问题的认识方面非常成功。ESF 应该支持世界科研诚信会议的继续。它们是交流良好做法和经验的重要论坛，有助于将信息传播到已经参与这项工作的机构和个人之外。未来会议的一个重要部分应该是介绍关于诚信和不当行为的新研究。

三、欧洲科研诚信行为准则

3.1 前言

目前的行为准则提案是欧洲科学基金会成员论坛第 2 工作组（WG2）内一系列讨论的结果；欧洲科学院和伦理常设委员会；和欧洲科学院成员学院的代表会议（伯尔尼，2009 年 6 月 29-30 日）。讨论基于在第 2 工作组和欧洲科学院内分发的讨论文件 2 的各种草案。

欧洲科学论坛关于研究和学术领域良好科学行为的简报提出了挑战，其中提出了以下建议（第 60 条）：“在追求科研诚信和良好实践方面，国家科学院处于有利地位，可以发挥领导作用。它们往往是最合适的独立机构，可以建立和支持一个国家科学道德委员会，并提名独立专家进入调查涉嫌不当行为案件的小组。那些聘用科学家的学院还有一项额外的责任，那就是制定和管理自己的指导方针和行为规范。”

本文分析了世界各地涉及科学和伦理质量的学术机构、研究基金会和其他组织制定的大量关于科研诚信的现有国家和国际准则、道德准则和规章。特别是美国科研诚信办公室出版物《负责任的研究行为导论》、经合组织关于确保科研诚信和防止不当行为的最佳做法的报告，协调委员会向经合组织全球科学论坛提交的促进国际不当行为调查的建议文本（提交给全球科学论坛 2009 年 2 月第 20 次会议）对本文提出的主张提供了支持。此外，本文所表达的思想与欧洲科学院的《科学诚信备忘

录》和欧盟委员会的《研究者伦理》是一致的。

在许多学院、大学和资助组织中，一些关于科研诚信和良好研究实践的准则或指南已经生效。我们并不打算用这里提出的守则取代这些准则。我们期望这些守则或指引与后者相当一致。在某些情况下，可以考虑在本建议的基础上作一些补充或改进。但是，在尚未制定或仍在制定这一法典的国家，这一新的法典可能会产生促进作用。本文件代表在某一特定时间点就一套原则和优先事项达成的协议：不断变化的国家或机构框架或科学和技术发展可能需要作出一些定期调整。

当然，对欧洲行为准则的限制并不意味着这些原则和指导方针仅限于欧洲科学界。希望它们能进一步成为世界科学组织（如国际科学院小组）或国际科学理事会（ICSU）公认的全球接受的准则。其目标是促进加强科研诚信制度设置的出现，并在整个欧洲制定标准，最终使其有效并在世界范围内实施。

下面，我们将提出一项行为准则，在此之前有一个简短的序言，然后是广泛的说明；一个良好研究实践的建议准则清单；以及在国际合作研究中处理不当行为指控和研究诚信问题的建议。

3.2 行为准则

3.2.1 序言

本《行为准则》不是一部法律，而是自律的准则。制定科学和学术研究的原则和美德，确定适当的研究行为的标准，并在科研诚信受到威胁的情况下整顿自己的秩序，是科学界的基本责任。

科学作为知识增长的过程，植根于更广泛的社会伦理背景中，科学家必须意识到他们对社会和人类福利的具体责任。他们对选择研究对象及其后果负有责任，并有责任对研究对象进行适当的护理和处理，有责任关注研究成果的实际应用和使用。然而，在本准则中，我们在进行研

究时将自己局限于诚信的标准，并不考虑这种更广泛的社会伦理责任。

3.2.2 行为准则

科学包括自然科学、社会科学和人文科学，是通过观察和实验、研究和思考而获得的系统化知识。科学研究是为了确定研究对象的性质和原理而进行的。尽管所有的科学在内容和方法上都有所不同，但它们都有一个共同的特点：它们依赖于论据和证据，即对自然或人类及其行为和产物的观察。

研究人员、研究机构、大学、研究院和资助组织承诺遵守和促进科学诚信的原则。这包括：报告和交流中诚实、研究中的可靠性、客观性、公正和独立性、开放性和可获得性、关照的义务、提供参考和给予学分时的公平以及对未来科学一代的责任。研究机构、资助组织、研究院和科学研究领域的其他行动者必须在数据管理和保存记录和数据方面遵守适当的标准，并在与研究参与者打交道时遵守高度的道德标准。

研究雇主（大学、研究所和其他从事研究的组织）也有责任确保科研诚信的文化盛行。这包括明确的政策和程序，对研究人员职业生涯各个阶段的培训和指导，以及强有力的管理程序，以确保遵守高标准，并在早期发现任何违规行为。

捏造和篡改，包括不实陈述和故意省略不受欢迎的事实或数据，是对科学精神最严重的违反。此外，剽窃是一种不可接受的不当行为，是对其他研究人员的侵犯。

未能妥善处理这类不当行为的机构或组织也会被判玩忽职守。应适当评估所有指控，并充分调查可信的指控，如果指控得到证实，应采取纠正行动。

轻微的不端行为，只反映了研究人员的糟糕表现，而不是严重的不当行为——一些对数据的调整或选择或数据的“适应”——可能不会导致正式指控。然而，学生或初级研究人员的轻微不端行为应该总是受到

老师或导师的谴责和纠正。更有经验的研究人员的轻微不端行为，如果导致错误陈述，可能会被更严肃地对待，如果重复，应被视为不当行为。

除了违反负责任的科学的基本原则之外，在科学研究中许多其他形式的不良和不适当的做法也值得注意。这些问题包括不良的数据实践和不充分的数据管理、不恰当的研究程序（包括获取知情同意的程序存在问题）、对研究参与者的尊重和照顾不足、研究设计不当和观察分析中的粗心、不适当的作者或出版实践，以及审查和编辑的疏忽。其中一些是非常严重和不光彩的，例如滥用道德要求和对公众、研究对象或参与研究的其他参与者的信任。然而，与具有普遍性质的科研诚信及其违反的基本原则不同，这种做法可能受制于不同的民族传统、立法规定或制度规定。因此，在研究中良好实践所需要的规则体系（严重违反道德原则或法律的除外）不应成为普遍行为准则的一部分，而应以国家良好实践规则的形式发展，该规则将承认国家或机构体系之间的合法差异。所附的建议清单应作为制订这种国家良好做法规则的指导方针。

对研究不当行为指控的调查应符合进行调查的国家的国家法律。我们需要的是一个统一、足够迅速、正当和公平的程序，并导致适当的结果和制裁。调查必须按照程序诚信、同一管辖范围内的一致性和对各方公平的最高标准进行。保密应尽可能地遵守，应避免不必要的损害声誉，并应向被发现有研究不端行为的人采取相应的行动。在任何可能的情况下，都应采取预防措施，以确保调查进行到最后得出结论。他们不应仅仅因为违约者离开了该机构就停止行动，让问题得不到解决。

在国际合作中，合作伙伴应同意按照相同的研究诚信标准进行研究，并将任何可疑的偏离这些标准的行为纳入研究，特别是所谓的研究不当行为，应立即引起项目负责人，以及大学或研究所的高级负责人的注意，以便根据主要责任方的政策和程序进行调查。同时尊重所有参加国的法律和主权。应遵循经合组织全球科学论坛协调委员会所建议的大

规模、资助的国际项目，促进良好做法和处理可能的不当行为。由该委员会推荐的样板文本应体现在建立合作项目的正式文件中。

3.3 背景与说明

在本节中，将更广泛地说明上文提出的略显精简的行为守则。将讨论科学和学术的性质，在科学和学术研究中应培养的价值观，各种不光彩的不当行为形式，并将推荐处理不当行为指控的程序和良好研究实践的规则。

3.3.1 科学与学术的本质

从广义上讲，科学（拉丁语中科学就是知识）是通过观察、实验、研究和思考而获得的系统化的知识。它植根于人类的好奇心，希望了解物理、生物和社会世界，以及人类的思维及其产物。科学的目的在于加深我们的理解，扩展我们已知的知识。“科学”一词通常只适用于自然科学和社会科学；在这份文件中，它将被应用在更广泛的意义上，就像德语单词“Wissenschaft”，它也适用于人文学科。当然，不同学科之间存在差异，有时甚至表示为“文化差异”，但在本文的讨论中，重点将放在共性上，而不是学科之间的差异。

科学研究是为了确定所研究事物的性质和原理而进行的。这种研究是多样化和多方面的，不能用单一的事实和规范描述来描述。然而，尽管它们的方法和传统可能不同，所有的科学都有一个共同的基本特征：它们依赖于论证和证据，即对自然的观察，或对人类及其行为和产物的观察。

科学不是一项孤立进行的事业。做研究离不开其他科学家和学者的工作；在大多数情况下，它需要与他人合作（参见默顿的社群主义）。这种合作越来越具有国际性。科学团体也决定适当的研究方法和结果的验证。因此，科学研究对人类知识扩展的贡献，只有在其结果以一种他

们能够判断其有效性的方式呈现给他人时才会发生(默顿有组织的怀疑主义)。

科学与外部世界还有另一种联系。不仅社会和政治力量影响研究方向，科学本身也极大地影响社会发展。科学的影响现在已经扩展到几乎所有的知识及其应用领域，它对社会做出了巨大的贡献，尽管它的成果有时可能以及曾被滥用。科学家和研究人员的责任是尽其所能确保研究是为了全人类的福祉和社会的福祉。

来自有权势的人或机构的胁迫、宗教或政治压力、经济或金融利益都可能使科学腐败。因此，科学应该尽可能地做到“公正”和独立，并且始终是公正的，并且应该有遵守自己的法则和标准的自由。与此同时，我们必须承认，科学家是在价值限制的环境下工作的。他们的范式假设、对研究对象的选择、收集数据的方式以及其发现对社会的影响，都与科学发展的伦理和社会背景有关。

3.3.2 科学与伦理

上一节提到的伦理/社会价值和条件再次强调了科学家的伦理和社会责任。应该区分两类问题：与科学和社会相关的问题，强调研究的社会伦理背景；与科学诚信相关的问题，强调在进行研究时的标准。当然，这两个类别之间没有完美的分水岭。某些形式的不当行为可能对公民的健康或福祉产生严重后果，因此可被视为广义上的不道德行为，但根据对《行为守则》的讨论，这一区别可能正在得到澄清。

当把科学放在更广泛的伦理/社会背景下看待时，任何伦理问题都会出现。这个问题值得研究吗？这种研究的结果是什么？研究结果是否会对人类、自然或社会造成危害，或与人类的基本价值观相冲突？研究是否足够独立于相关方？大学或实验室是否会变得过于依赖赞助的合同研究？研究者是否能够防止对其发现的不当使用、有选择地使用和误解，或防止对其发现的令人反感的应用？

本文件将不涉及科学的这种更广泛的伦理背景，而是集中于第二类——负责任的研究行为。

3.3.3 科学与学术诚信

原则

科学不端行为的定义和正当科学实践的规范都是基于科研诚信原则的。这些原则是所有科学和学术研究人员和实践者都应该单独、相互之间以及对外界进行观察。这些原则包括：

- 诚实地呈现研究目标和意图，准确而细致地报告研究方法和程序，并就研究结果的可能应用传达有效的解释和正当的主张。
- 执行研究的可靠性（细致、细心、注意细节）和沟通结果的可靠性（公正、全面、无偏见的报告）。
- 客观性：解释和结论必须建立在能够证明和二次审查的事实和数据基础上；数据的收集、分析和解释应具有透明度，科学推理应具有可验证性。
- 不受委托或利益相关方、意识形态或政治压力集团、经济或金融利益的影响。
- 与其他科学家开放沟通和讨论工作，通过发表研究结果为公众知识做出贡献，与公众进行诚实的沟通。这种开放性的前提是数据的适当存储和可用性，以及感兴趣的同事的可访问性。
- 对研究参与者和研究对象的关照义务，无论是人、动物、环境还是文化对象。对人类和动物的研究应该始终基于尊重和关照义务的原则。
- 在提供适当的推荐信、对他人的工作给予应有的赞扬和诚实正直地对待同事时保持公平。
- 对未来科学世代的责任。青年科学家和学者的教育需要有指导和监督的约束性标准。

3.3.4 科学与学术诚信

不当行为

违反这些基本规范就会导致科研不端行为，这是科学领域不恰当行为的症结所在。科研不端行为对科学是有害的，因为它可能会为其他科学家创造错误的线索，或者结果可能无法复制，导致欺骗的延续。它还对个人和社会有害：在生产有缺陷的产品、不充分的仪器或错误的程序时，欺骗性的研究可能导致不安全药物的释放和使用。此外，如果政策或立法是基于欺骗性研究的结果，有害后果并非不可想象。而破坏也会通过破坏公众对科学的信任而造成。科学的可信性将会下降，人们对科学的信任将会被颠覆，这种信任将会是对人类和社会福利（环境、健康、安全、能源）至关重要的众多决策中可靠的信息和建议来源。这可能会导致对可允许的研究的不良限制，从而进一步损害对知识的追求。

有一些经验证据表明，科研不端行为的发生率正在增加。出版压力、商业化、更大的资金竞争、更多的机会（例如通过互联网）、评估实践和目前的科学家职业体系，都可能导致这一不幸的发展。

对科学精神最严重的两种违背是伪造和篡改。伪造是编造结果并记录或报告它们。篡改是操纵研究过程或更改或遗漏数据。在报告其他研究人员的成果、报告专家意见和对科学的公众传播中也可能出现伪造和篡改。第三类不当行为是在提出、执行或审查研究或报告研究结果时的剽窃。剽窃是盗用他人的想法、研究成果或文字而不给予适当的肯定。教科书或流行材料中某个概念或解释或说明性材料（如原始图像和照片，以及冗长的表格）的精确措辞受到版权法的保护，但仍有可能被剽窃。剽窃的顺序是不同的，因为它被认为对同行科学家的伤害大于对科学本身的伤害。然而，我们已经看到，开放是基本的诚信原则之一，科学的进步依赖于同行科学家之间的交流和讨论，以及运行良好的同行评

审系统。如果科学家们因为害怕不被认可为贡献者或作者而犹豫甚至拒绝这种开放和交流，科学的质量也会受到影响。

此外，对这种违反诚信原则的行为（试图掩盖、报复举报者和违反正当程序）处理不当也可被归类为不当行为。总的来说，应该强调研究机构、资助者、学院、大学和从事和管理研究的其他行动者有责任促进良好的研究管理，以便将科研诚信灌输到文化中。

人们普遍认为，处理不当行为案件的主要责任在于从事研究的科学家的雇主。通常情况下，这与被指控的研究人员所在的研究所或大学有关。如果提出了严重的指控，这些机构应该有一个常设委员会，处理不当行为，或建立一个特别委员会。

此外，人们普遍一致认为，需要有一个统一和足够迅速的正当和公平的程序，并产生适当的结果和制裁。经合组织国际科研不端行为调查协调委员会为国际合作项目的研究不端行为调查制定了一些总体原则，可用于一般应用。附件一载有按照经合发组织建议的主要原则提出的建议原则。

回应将取决于研究不当行为的严重性。在这方面，应考虑不当行为的意图程度、行为的后果和其他加重和减轻因素。必须证明不当行为是有目的的、故意的或不顾后果的。作为被怀疑研究者有罪的标准证据，应该采用“证据优势”。应该规定研究不端行为不包括诚实的错误或意见分歧。

应该认识到，在不可接受的行为和仍然可接受的行为之间的界线并不总是明确的，也不是学术辩论之外的。在太小的样本验证和用“案例”数据说明论点之间的界限在哪里？剽窃和粗心引用之间的界限在哪里？有一种不正确但“有利”的统计技术真的是故意选择的吗？有偏见的数据选择是为了展开科学讨论，还是为了对证据进行全面回顾？

在文献中讨论了另一类不当行为，即“可疑的研究实践”（QRP）。

可疑的研究实践中有三种不当行为：第一种：个人不当行为：恐吓学生、骚扰、歧视、漠视研究过程中对社会或文化规范、滥用资金等。虽然我们在这里处理不受欢迎的，有时是不可接受的行为，但这不是“科学不端行为”，因为它不会影响研究记录的诚信。大多数这种不当行为都受到适用于每个人的法律和社会惩罚。

其次，各种各样的不良研究实践，如不良的数据管理，不正确的研究程序，或一些与出版相关的不当行为。不良做法是不可接受的，而且往往会损害公众对科学的信任。它们确实需要纠正，但并不一定是对科学诚信的基本侵犯。下一节将处理这个类别。

第三，轻微的不端行为可能不会导致正式的指控和调查，但考虑到它们可能发生的频率，它们同样具有破坏性：对数据进行一些“调整”、抄近路、忽略不受欢迎的观察……应该清楚的是，在这里我们处理的是不可接受的违反科学诚信原则的行为：它是处于新生状态的伪造。如果发生在学生或初级科学家身上，应该通过适当的监督和指导加以纠正。对于更有经验的研究人员，特别是如果被发现重复使用，就应该更严肃地对待。

需要强调的是，上一节讨论的原则和本节界定的侵权行为是研究中负责任行为的基本和普遍准则。没有必要在包含这些原则和侵权行为的行为守则中进行文化或区域调整或妥协。

3.3.5 良好实践

除了捏造、篡改和剽窃之外，科学研究中许多其他形式的令人反感的做法也值得注意。其中一些会造成严重的道德或法律后果，另一些可能会造成损害、不满或程序纠纷。它们中的许多可能会破坏公众对科学的信任，就像对科研诚信的基本侵犯一样，因此应该受到科学界的重视。以下类别可加以区分：

1. 数据实践，包括数据管理和存储，将数据置于希望复制研究结

果的同事手中，充分保存原始数据。

2. 研究过程。偏离预期的做法包括对研究对象关照不足，对人类对象、动物、环境或文化遗产尊重不足；违反协议的；未获得知情同意；隐私保护不足；实验动物的不当使用；或违反信任（例如保密）。不恰当的研究设计、实验和计算中的粗心导致重大错误也可以归为这一类，不过无能和不诚实之间的界限可能并不明显。

3. 与出版相关的行为，包括作者身份的实践。要求或授予不应得的作者身份，否认应得的作者身份，或分配不充分的信用，都是不可接受的。违反出版规则的行为，如重复出版、切分出版、没有或过长时间延迟出版、对投稿者或赞助者的确认不足等，也属于这一类。

4. 评论和编辑问题，包括独立和利益冲突，个人偏见和竞争，挪用想法。

同样，可接受和不可接受的做法之间的分界线有些模糊，并且可能因国家、地区或学科而不同。但是，正如第 3.3.4 节所讨论的那样，在违反这些做法的一些行为和严重的不当行为之间也有一个细微的界限。不正当的作者声称和代笔作者身份是伪造的形式，作为编辑或评论家窃取想法是剽窃，给研究参与者造成痛苦或压力，或在没有知情同意的情况下使他们暴露在危险中肯定是道德上不可接受的行为。但总的来说，这些“良好做法”指的是在进行、管理和报告研究方面的实际规则和安排。

与科研诚信的基本原则以及通过伪造、篡改或剽窃来违反这些原则的做法不同，这些原则具有普遍性，上述良好做法可能会受到文化差异的影响：定义、传统、立法规定和制度规定可能因国家或地区而异，有时也因学科而异。因此，研究中的良好做法所需要的规章制度不应成为普遍行为守则的一部分。它应该以国家或机构良好做法规则的形式发展，承认国家、纪律或机构制度之间的合理差异。然而，应提供该规则

中应处理的问题清单，包括如何处理这些问题的建议。总的来说，这些建议是以普遍同意为基础的，但是，如前所述，议事规则必须考虑到国家差异，不能声称具有普遍性。

3.4 良好操作规则指南

在这些指南中，科学和学术研究的良好实践被区分开以下类别：适当的数据实践，适当的（技术和负责任的）研究程序，深思熟虑的出版相关行为和负责任的审查和编辑程序。

各国应根据本国的立法要求或传统，通过、修改或补充这些建议，并制定自己的一套良好做法规则。然后，科学协会将要求其所有成员遵守这些规则，也将要求其研究所和科学组织要求自己的成员遵守这些规则。

1. 良好的数据实践：可用性和访问

- 所有主要和次要数据应以安全和可访问的形式存储。

- 原始的科学或学术研究数据应保存相当长的一段时间（至少 5 年，最好 10 年）。

- 研究数据应放在由复制研究或详细阐述其发现的同事的处置。

- 应保障科学家的行动自由、和平和自愿与其他科学家交往的权利以及言论和通讯自由。

2. 适当的研究过程

- 所有研究的设计和进行都应经过仔细和充分考虑；应避免疏忽、仓促、粗心、漫不经心，以免人为失误。

- 研究人员应该努力实现在申请支持或资助中承诺的内容。

- 研究人员必须设法减少对环境的任何有害影响，并应意识到有必要对资源进行可持续管理；这意味着有效地调配（财政和其他）资源，并尽量减少浪费。

– 客户和/或赞助商应注意研究人员的道德和法律义务，以及由此可能产生的限制。

– 应让客户和/或赞助方了解发表研究结果的重要性。

– 当客户或雇主合法要求时，研究人员应尊重数据或调查结果的保密性。

– 如果研究获得了资助或联合资助，将为资助方提供适当的账户。

3. 负责任的研究过程

– 所有研究对象，无论是人类、动物、文化、生物、环境或物体，都应被尊重和小心处理。

– 不应损害社区、合作者和与研究有关的其他人的健康、安全或福利。

– 对研究对象的年龄、性别、文化、宗教、民族出身和社会阶层应保持敏感。

– 不应违反人体实验规程：这意味着在充分和适当信息的基础上遵守知情同意的要求，并自愿同意参与，以最高可能的机密性对待个人信息，避免不必要的欺骗，并仅将获得的信息用于调查目的。

– 只有在对达到研究结果的其他方法进行了调查并发现不适当的情况下，才可接受使用动物进行研究；对动物造成的任何伤害或痛苦，都必须超过实际预期的好处，并必须尽可能地减少。

4. 与出版有关的行为

– 研究人员应以公开、诚实、透明和准确的方式公布研究结果和解释。

– 研究人员应努力确保他们的研究成果尽早发表，除非出于商业或知识产权考虑（例如专利申请）需要延迟发表。

– 作者身份应仅基于对研究的创造性和重大贡献（即对设计、数据收集、数据分析或报告的贡献，而不是对研究小组的总体监督或文本编

辑的贡献）。不接受荣誉作者（即列出不符合资格的作者）或代笔作者（即省略符合作者身份标准的个人）。所有作者对出版物的内容完全负责，除非声明他们只对研究和出版物的特定部分负责。

– 作者的顺序应得到所有作者的同意，理想情况下在项目开始或文章/专著开始时，并可能遵循国家和/或纪律守则。决定作者顺序的标准应该在项目或写作开始时就达成一致。

– 合作者和助理的工作和贡献应被他们允许后，在适当的情况下得到认可。

– 所有作者应声明可能是财务、商业、个人、学术或政治等任何相关的利益冲突。

– 应适当承认影响报告研究的其他人的重要工作和智力贡献。正确引用相关工作。参考文献应限于（纸质或电子）印刷出版物和“印刷”出版物。

– 在与公众和大众媒体沟通时，应保持同样的诚实和准确标准；任何夸大调查结果的重要性和实际适用性的企图都应予以抵制。

– 在不同期刊上发表相同（或主要部分相同）的作品，必须得到期刊编辑的同意，并应当适当地参考首次出版的刊物。在作者简历中，相关文章必须作为一项提到。

– 应适当提及和承认对研究及其出版的财政或其他类型的支持。

5. 审查和编辑问题

– 有相关潜在利益冲突（可能是个人的、学术的、政治的、商业的或金融的）的编辑或评论员，最好不要参与任何出版决策。如果冲突被认为是轻微的或不可避免的，它应该被披露给读者。

– 审核人员应及时提供全面、准确、客观和合理的评估。

– 在审稿时，必须保密。

– 未经作者许可，审稿人和编辑不得使用提交的稿件中的数据

或解释。

- 为筹资、奖励或侦察目的而提交的项目或方案的审查过程适用同样的标准和规则。

- 同样的标准和规则适用于个人或机构的任命、晋升、奖励或其他形式的表彰的审查过程。

3.5 国际合作研究

国际科学合作正在急剧增加，这不仅是因为国际资金的增加和现代通信技术的刺激，而且还因为科学本身已经发展成为一项真正的合作和国际活动。就科学诚信标准和处理不当行为案件的规则和程序达成共同协议，在国际研究中也至关重要。这是国际公认的行为准则的主要论点。

在国际合作中，合作伙伴应同意按照本文件中制定的研究诚信标准进行研究，同时项目负责人和大学或研究所的高级负责人立即关注任何疑似偏离这些标准的行为，特别是涉嫌的研究不当行为。此类案件应根据对项目负有主要责任的国家的政策和程序进行调查，同时尊重所有参加国的法律和主权。

在正式的、大规模的、通常由外部资助的国际研究项目中，可能存在以下问题：如果提出不当行为指控，应由哪个国家进行调查，以及如何进行调查；更重要的是，当相关的国家政策彼此不一致时，会发生什么。经济合作与发展组织全球科学论坛协调委员会建议建立一项合作研究协议，以解决促进研究中负责任的行为，并描述项目内研究不当行为指控的调查程序。委员会编制了《国际协定》的样板文本，应体现在确定合作项目的正式文件中。本样板文本载于附件二。

附件 1：

调查研究不当行为的推荐原则

过程的诚信

• 对研究不当行为指控的调查必须公平、全面、方便，但不影响准确性、客观性和彻底性。

• 参与程序的各方必须确保他们拥有的任何可能构成利益冲突的利益被披露和管理。

• 对程序的各个方面进行详细和保密的记录。

均匀性

• 应对不当行为的处理程序进行足够详细的说明，以确保程序的透明度和司法管辖范围内案件之间的一致性。

公平性

• 研究不当指控的调查应以对各方公平的方式进行，并符合相关法律。

• 被指控科研不端行为的人员必须以书面形式获得指控的全部细节，并允许有公平的程序来回应指控、提问、出示证据、传唤证人和对所提供的信息作出回应。

• 允许证人由他们选择的任何人陪同或寻求建议和帮助。

• 应对发现有研究不端行为的人员采取相应的行动。

• 所采取的任何行动都应受到上诉。当然，应该有一个权威机构发布最终决定。

保密性

• 调查过程应尽可能保密，以保护参与调查的人。只要不影响对指控、健康和安全性的调查，或研究参与者的安全，就应保持这种保密。

• 在可能的情况下，对第三方的任何披露都应在保密的基础上

进行。

• 如果组织和/或其员工有法律义务通知第三方研究不当指控，这些义务必须在适当的时间通过正确的机制履行。

没有损害

• 任何被指控科研不端行为的人都被视为无辜。

• 在指控被证实之前，任何人都不应遭受任何不必要的惩罚。

• 任何人都不应因善意地提出不当研究指控而受到任何惩罚，但应对发现有恶意指控的人采取行动。

附件 2：

经合组织全球科学论坛协调委员会为促进国际不当行为调查建议的国际协议的样板文本

双方同意：

• 根据科研诚信标准开展我们的研究，定义见“国际合作研究项目研究不当指控调查程序指南”（www.oecd.org/sti/gsf）和其他适当文件，包括：（具体说明适用的国家行为和纪律守则或国家道德准则）；

• 任何涉嫌偏离这些标准的行为，特别是涉嫌的研究不当行为，将立即引起（所有指定联络点的）注意，并根据（由主要责任机构填写的）政策和程序进行调查。同时尊重所有参加国的法律和主权；

• 配合并支持任何此类调查

• 接受（根据任何上诉程序）任何此类调查的结论并采取适当的行动。

四、实现科研诚信：研究诚信治理框架的要素

4.1 科研诚信治理框架的范围

许多欧洲国家目前要么没有促进科研诚信和应对不当行为的国家

指导方针，要么发展不良。此外，一些国家目前正在修改或审查现有结构。作为 ESF 成员组织科研诚信论坛的一部分，第三工作组（WG3）承诺：确定框架并制定指导方针，以建立国家和/或机构结构，实施良好的研究实践指导方针，并处理研究不当行为指控。

论坛成员一致认为，科学研究和学术研究都应遵循科研诚信原则，并应将早期预防和归纳措施作为课程的一部分，以确保科学家和学者认识到良好的研究实践（从而认识到科研诚信）。

任何旨在加强研究诚信的治理框架范围内的不当行为范围，都应包含在欧洲研究诚信行为准则下确定的研究不当行为的核心问题，即所谓的 FFP（伪造，篡改，剽窃），还有其他形式的严重科学不端行为。第三章对此类不当交易进行了较为详细的论述。

为了促进建立处理科研诚信的相互兼容的机构结构，我们提出以下核心元素，模型结构和朝着建设这样的结构的建议。工作组由来自不同种类科学组织的成员组成，旨在提出适用于不同制度和法律环境的框架。下面所有的提议和建议都毋庸置疑要根据现有的适用法律和其他法定规则进行验证。

4.2 科研诚信治理框架的核心要素

国际行为准则和指导方针，如由 ESF 和欧洲科学院、经合组织的全球科学论坛和最近的新加坡声明制定的强有力的研究诚信的基本原则，得到了广泛认可，必须成为任何旨在确保科研诚信框架的基础。

因此，一个理想的科研诚信治理结构应该：

- 保护“相互信任”的核心原则，这是知识共享和研究合作的必要条件；
- 为科学努力中的所有参与者提供共同标准；
- 保护个人和机构；

• 加强公众对研究过程及其成果的信心。

我们认为科研诚信在社会中最相关的位置将影响如何建立管理期望和未能满足这些期望的治理框架。科研诚信是否应被视为科学管理的内部部分，还是反映和回应社会普遍关注的问题?它应该通过自我约束的道德承诺还是通过立法来解决?

就其本质而言，研究建立在诚实和竞争的基础上，建立在真实但有选择性的数据上，建立在对同行（以及越来越多的其他社会行为者）之间的概念和方法框架的公开批评上。长期以来，科研诚信一直被认为是科学治理的一部分，而不是需要法定立法，因为行为准则和良好研究实践的建议依赖于理解和坚持核心研究价值，如在第 3 章中更详细地阐述的。另一方面，在某些情况下，会严重偏离良好研究实践构成法定罪行，而手头的案件受当地法律管辖。

制定科研诚信治理框架的挑战在于，它必须与不同的国家法律背景相兼容，将全球公认的原则转化为国家政策和实践，并与科学家和学者为自己制定的基本伦理准则相一致。在接下来的工作中，重点将是协调基本(和全球)原则与国家适用的法律和制度背景的任务所带来的挑战。指导思想是使结构在不同情况下具有灵活性和兼容性，在坚持原则方面不妥协。

每个欧洲国家的起点都不同；此外，在发展中国家、转型国家或新兴经济体中，促进科学系统的诚信可能面临许多根本不同的挑战。然而，鉴于所有这些不同级别的科学系统之间的研究合作日益密切，有范围和需要加强所有现有系统：第一步意味着识别和采用已经存在的（并在欧洲行为准则中表达的）核心要素，以及哪些国家和机构应该设定为激励改善其当前科研诚信治理结构的基准。

一个旨在确保监督科研诚信的治理框架必须包括工作组确定的一些核心要素，无论它在哪个级别运作，以确保它将发挥作用。这些包括：

（1）核心定义的协议

首先，有必要就“科研诚信”和“科学不端行为”的概念范围内的内容达成一致。这样一项协议对于在欧洲和其他地区建立和实施协调一致、兼容的科研诚信治理结构至关重要。然而，达成这样一项协议的挑战是不可低估的。第 3 章提出的《欧洲行为准则》以及欧洲科学院和工作小组 2 的工作成果提出了一些定义，希望这些定义能够在欧洲和其他地区得到采纳。2010 年 7 月，在新加坡举行的第二届世界科研诚信大会上，该论文获得了普遍好评。

良好研究实践的定义需要考虑到欧洲的异质性和需要反映的许多科学学科。这意味着，国家和领域对不良行为的构成以及不良行为的严重程度的解释可能因国家、组织甚至纪律的不同而不同。广义地说，《欧洲行为准则》（第 3 章）解决了考虑国家和组织的文化和哲学规范和习惯、公众对特定国家或特定领域的科学和学术的看法和关注以及国家利益相关者需求的需要。

（2）国家授权

已建立国家监督或治理结构的国家的经验表明，有必要发表明确和权威的国家声明，以支持研科研诚信治理结构。这可以采取宪章或立法支持的形式。在制定这一任务时，各国可以借鉴已经处理这一问题的其他国家的经验，例如丹麦和挪威。在尚未举行全国辩论的国家，世界科学大会工作中提到的提高认识进程可能旨在在科学界和管理国家科学系统的主要当局之间建立联盟。

（3）公正和透明的程序

在地方和国家层面，公开宣传谴责和处理疑似科学不端案件的过程必须是公平和透明的。否则，利益攸关方可能不愿接受相关机构行为者的权威与合作。在预防和制裁之间取得平衡至关重要。需要更多地强调预防，以便无论采取什么程序，都将被视为支持一个确保良好研究行为

的系统，而不是孤立的惩罚行动。

（4）管理过程的责任

需要在地方和（或）国家一级明确规定预防、调查和实施制裁的作用和责任。此外，还有许多核心需求应该应用于操作级别。这可以分为两个阶段:

A. 事先：将良好科研行为和科研诚信原则嵌入科学和学术文化中：

（5）将良好科研行为纳入科学和学术文化的机制

没有人会质疑所有的研究人员都有权在一个促进良好科研行为的环境中工作。许多利益相关者在创造这样一个环境中都可以发挥作用，包括大学、研究机构、资助机构、期刊、专业组织、科研诚信办公室等。

预防、教育和提高认识应达到学术和研究人员职业生涯的所有阶段——本科生、研究生和负责研究的临时或永久雇员。在研究实践和科学领域不断快速变化的时代，如果认为当一个人达到研究团队领导者或终身教授的水平时就没有必要更新对良好研究行为的挑战和要求的知识是错误的。

为了将良好研究行为真正融入学术文化，在科学和学术生涯的一开始就有必要对良好研究行为进行培训；在为未来研究人员的工作做好准备的机构中，这种培训应该是其科研诚信治理框架的一个组成部分。国家框架应提及这一责任，资助方应要求其资金接受方采取所需的措施。

我们注意到在许多情况下，在本科水平的课程评估中，已经非常强调剽窃检测和预防。然而，在研究生和研究生以上的水平，我们发现正式良好研究行为培训的机会相对较少。最近许多国家朝着“结构化博士”模式的发展为良好研究行为奠定基础提供了一个极好的机会，而这个基础必须被视为研究生涯的起点。科研诚信也应该是研究监督和指导的组成部分，要求更多的高级研究人员充分认识和支持良好研究行为的原则和实践。在确保良好研究行为和尊重科研诚信规则方面，一个特别微妙

的时刻出现在跨学科、跨机构和跨国家的研究小组的组成中，这些研究小组有望密切合作。领导机构将被期望承担确保关于科研诚信的共同标准的责任。

（6）强有力的数据管理程序

重复实验的能力，从而验证（或伪造）科学文献中的主张是科学实践的一个关键原则。然而，即使在实验室级别的数据存储实践是足够的，研究生、博士后和越来越多的高级研究员的流动也会使数据跟踪变得困难。因此，应该鼓励机构投资于实验数据的集中和安全存储，以便在需要时轻松验证实验结果。各级培训应包括数据收集和存储方面的良好做法。

（7）确定研究人员和其他利益攸关方可从何处获取指导

期望个别机构制订准则和自己的培训材料是不现实的；国家监督机构和/或国际组织应在这方面提供援助。信息共享的工具可包括建立一个网站或其他公共论坛，收集关于良好研究行为和相关培训单位的高质量文件。这还可以包括介绍不当行为情景，作为研究人员和培训人员的教育工具。在其他地方，本文提到了新兴的欧洲科研诚信官员网络，作为从业者的一个可能的参考点，以及作为案例研究资源的计划网站。

（8）汇集案件信息的程序

无论在特定国家或机构采取何种方式，分享经验都极为重要。它可以帮助我们更容易地获得当地、国内和国际上的最佳实践。保护科研诚信，同时又不扼杀科研创造力，是一个不断学习的过程；知识和经验的汇集将建立一个关于研究不当行为程度的数据体，以及在地方、国家、整个欧洲和其他地方处理和预防这一现象的措施。

诸如欧洲科研诚信办公室网络这样的网络为从业者提供了一个宝贵的国际论坛，以分享他们的经验，并确定和讨论围绕科研诚信治理的

问题。

虽然有必要以适当的方式处理隐私问题，但毫无疑问，公布调查的积极和消极结果将有助于提高更广泛的研究团体的意识。因此，在地方和国家两级的协商机构之间以及在国家和国际两级之间，应当就分享知识达成协议。

B. 事后：处理研究失范或研究行为不良的指控：

（9）符合国家法律

在支持国家科研诚信治理结构的立法方面，必须注意不要创建一个过度法律主义的框架，这可能会威胁到创造力和对知识的追求。大多数国家已经在其法律体系中制定了一些规定和法规，其中也包括处理科学不当行为指控的内容。必须坚持和尊重这些原则，并让所有科学行为者了解这些原则；在地方和全国范围内推广和实施时，这些要素应先于任何科研诚信内部指导方针并凌驾于它。

（10）确保调查程序在法律上健全

除了研究不当行为对科学记录以及潜在的社会造成的损害之外，当个人受到源自和建立在受污染的数据集的做法的影响时，它还可能直接伤害到个人；令此类研究的主办机构和整个学科的声誉面临风险。另一个微妙的问题是，告密者的职业生涯可能受到不适当的制裁，或因无理取闹和不真实指控而受害的个人的声誉可能受到损害。因此，任何实施科研诚信治理结构的框架都必须将个人获得公平公正待遇的权利纳入其中，并应参考有关保护个人的适用法律标准。

还建议提高认识的措施应主动处理对个人尊严和职业前景的潜在威胁，包括要求在不应采取这种措施的情况下，保证保护参与这种案件的个人的最低法律标准。

（11）澄清收到关注或指控的程序

需要明确了解提出和接受指控的程序。这包括关于谁可以提出指

控，他们如何这样做（匿名的或具名的），应该以什么形式提出关注（口头的或书面的），以及指控/关注应该向谁处理的协议。

不同的国家和机构可能适用不同的程序；重要的是，在跨国和跨机构研究合作的情况下，这些差异应向有关各方明确说明。

（12）关于不当行为调查透明度的协议

任何研究诚信治理框架都应寻求在透明度和保密性之间取得适当的平衡；这意味着要适当保护被指控者的名誉。准则应包括明确说明向第三方（媒体、国家监督机构、资助者）披露结果的可取性或义务，以及在何种情况下可以或必须采取具体行动。

（13）决定上诉级别

在所有法律和准法律程序中，都应有上诉的情况。任何程序中都应清楚说明上诉的可予性、上诉的类型，例如关于调查的科学或程序因素的上诉以及上诉的程序。

（14）决定制裁和执行责任

需要就可以实施的制裁类型作出声明，确保这些制裁与良好研究行为守则的偏离程度相符。理想情况下，各机构（和国家）应达成一项协议，审慎地审查其措施以确保拟议制裁的兼容性；这在跨国和跨机构的研究合作中变得更加重要。不仅需要在制裁的类型上达成一致，还需要在谁能提出制裁以及谁有责任执行制裁的问题上达成一致。

（15）保护举报人

在构建科研诚信治理结构时，举报人问题是一个特别重要的问题。据观察，研究学生、博士后研究人员和初级工作人员最有可能观察到不端行为。然而，这些工作人员处于最脆弱的位置，即使是正当的抱怨，也可能会终结他们的研究生涯。他们也可能不愿向机构内的高级职员投诉，出于忠诚，或因为他们可能觉得自己的指控和意见不会得到中立和

公正的对待。

因此，如果必要的话，在法律上为举报人提供保护是至关重要的，因为科研诚信治理的成功完全和关键依赖于个人向前迈进的意愿，即使他们是相同的高等教育和研究结构的一部分。

4.3 科研诚信治理模型

我们观察到欧洲和其他地方目前正在采取许多广泛的科研诚信治理和/或监督方法。表 1 对它们进行了粗略的分类总结。

表 1：目前欧洲正在开展的诚信治理研究方法

研究诚信治理的方法	结构/支持方针和政策的类型	实施责任
自律/同行评审	没有关于处理不当行为指控的指导方针，强调一般（科学）道德	依靠同行评议，同行压力以及团队和个人的科学道德
高等教育和研究机构（无上级监管）	因地制宜采用良好研究行为和处理不当行为指控的准则	由机构领导的特别委员会或常务委员会
资助机构/学院、学术和专业协会	为受益人和成员讨论/建议/执行良好研究行为和处理不当行为指控的政策/指南	这些机构本身作为他们与科学界成员互动的职责的一部分（资金和成员规则）
高等教育和研究机构（更高级别、通常是国家的监管）	全国商定的关于处理不当行为指控的政策/准则；通常在本地实现；良好研究行为的措施主要在当地商定并实施	国家机构监督，但在地方执行
国家监管	国家立法/宪章方式处理良好研究行为和处理不当行为指控	国家（科研诚信）办公室或常务委员会

当然，大多数情况下的情况比表 1 所示的要复杂得多；通常，各机

构和国家机构同时采取一种以上的办法，因为相同的行动者行使不同的职能。国家规模的不同也将对所采取的方法产生影响。在较小的国家，建立科研诚信治理的“国家体系”可能更容易或更容易被接受，而在拥有非常大和强大的机构和大学的较大国家，可能更难就科研诚信治理的适当方法达成共识。然而，这种类型确实有助于说明在整个大陆和大陆以外的学术和政府系统中现有的方法的异质性，以及确保兼容性的措施的需要。

在说服地方和国家利益相关者建立科研诚信治理结构或改进现有治理结构时，需要考虑当前运行体系的优势和风险。每个机构、中介、社会或国家面临的挑战是平衡和整合个人责任和地方结构、国家科研诚信协调或治理以及普遍原则。在还没有建立起研究诚信治理结构的地方，或者在没有国家协调的严格的机构或地级进行治理的地方，挑战尤其严峻。某些领域（尤其生物医学研究）的结构的存在与其他科学领域的结构的缺失是另一个需要争论的问题。相反，可以观察到，当一个协调的和全国一致同意的系统出现时，治理结构的稳健性就会增加。

自我调节、个人机构层面的治理和同行评审

提供防止科学不端行为的措施的主要责任应由研究人员和学生的直接雇主或教育者的机构承担。在许多国家，地方机构有责任在出现不当行为指控时进行调查。这种自我监管认可了地方的责任和领导，提高了制度层面的诚信问题的可见度，并确保当地对可疑不当行为情况的了解进而可以为适当的行动提供信息。

尽管存在许多优点，这种方法有一些固有的风险，潜在的声誉会损害一个机构，特别是在这一指控涉及有名气的研究者或研究领域，并且机构自身为其骄傲，会促使他们隐藏案件或关起门来处理问题。因此，在没有标准程序和需要采取特别安排的情况下，如果案件得不到充分处理，自我监管可能会被认为不利于公正，从而增加公众怀疑研究

的风险。缺乏商定的指导方针和程序也会导致不同机构产生不一致的结果。

然而，除了公平对待的争论之外，还有一个关于效率的争论：缺乏商定的科研诚信治理的过程和程序可能导致案件发生时时间的损失，因为调查基本上将从头开始。此外，个别机构不太可能在调查不当行为方面积累广度和深度的经验，也失去了共同学习或积累和分享经验的机会。此外，缺乏商定的程序和明确表示的支持，可能会使告密变得困难，或使人们不愿担忧。

类似地，同行评议的过程可以突出数据的诚信的问题或所提出的方法的问题，但同行评议学院的参与者，作为个人，由于时间紧迫，可能并不总是能够完全访问必要的信息（甚至，特别的在大量数据集作为出版物的一部分提供时，而这越来越多的在大量的学科中发生）。

所有这些论点都有力地表明，在处理违反研究诚信原则的问题时，自我监管可以通过更高层次的协调支撑结构得到增强。

国家机构推动的科研诚信监督

机构层面的科研诚信治理所固有的风险，可以通过监督结构来应对，其中此监管机构采取行动协调跨机构的过程、程序和指南，并提供一致的建议、指导和支持的。这种区域或国家监督结构还可以促进建立更高的申诉机制，并减少因错误地理解机构自身利益而隐瞒案件的可能性。

由研究资助机构、学术机构和学会以及专业和学科协会提供监督和指导，很可能被许多研究团体接受，因为它们在程序和指导方针方面提供了独立性和可信性。由研究资助机构提供监督的困难在于，在许多国家，研究机构可能会质疑由这样一个机构进行国家协调的合法性，并拒绝遵守。此外，许多这类机构将没有必要的资源来监测遵守情况，而整个系统将在很大程度上取决于各机构的支持以及它们交换信息的意愿

和承诺。

此外，任何这类部门监督的例子都不太可能同时涵盖公共和商业活动，在考虑研究诚信治理安排时，应牢记这一基本要求。监督管理专业协会和学术团体可能会遇到类似的困难，虽然在荷兰 LOWI——其秘书处在荷兰皇家艺术与科学院已经几乎普遍覆盖的公共部门的科研诚信治理国家，并汇集了这项研究理事会、大学、研究院及其他资助机构。

无论由谁进行区域或国家监督，必须强调的是，执行的责任仍将由地方承担，并伴随着上述挑战和风险。出于同样的原因，最重要的是，不管谁提供区域或国家监督，负责建立良好研究行为的文化和实现科研诚信规则将由本地社区和机构负责，以及随之而来的前一节中描述的挑战和风险。这是提高意识活动必须牢记的两个重要基本原则。

国家科研诚信治理结构

适当组成的国家科研诚信治理结构可以解决由研究资助机构、专业协会或学术团体确定的单纯的自我监管或部门监督/监管模式的许多关键问题。国家支助办公室可以在公共和私营研究部门提供一致的建议、支持和指导方针。它们还可能被视做为调查程序所必需的独立性以及案件获得和处理方面的平等，从而降低发生利益冲突的可能性。重要的是，国家常务委员会可以达到专业水平，良好研究行为和调查的权威是众人皆知的。

基于国家办公室的科研诚信治理还可以促进国际合作和相互跨国界和跨机构的学习过程。新出现的框架应充分利用机会与其他国家科研诚信办公室建立联系。目前欧洲科研诚信办公室网络就提供了这样一个平台。

发展国家科研诚信治理结构的缺点主要与机构的观念和行为有关。由于感知到的自主权丧失和国家办公室的干涉，特别是如果国家办公室的资源和地点被认为受到政治影响时，各机构可能会采取守势。还有一

种风险是，机构可能没有资源按照国家标准提供培训和教育，或者他们可能会试图把他们对良好研究行为的责任交给国家办公室。然而，随着时间的推移，一个公正和专业的国家办公室应该减轻许多这种担忧，特别是如果该办公室被视为尊重机构的责任和自主权。

4.4 选定的全国性研究

诚信治理结构

在科学不端行为的定义以及为确保一个国家的国家研究系统的诚信所采用的预防措施和做法的范围方面，在全球、全国和机构中仍然存在一些差异。

预防措施包括在本科和研究生阶段进行全面且强制性的科研诚信教育（如丹麦），以及针对本科生的具体的剽窃教育（如英国）。调查程序和结构也各不相同。特别的，教学、促进和确保诚信和良好研究实践的主要责任，以及调查和处理研究不当问题的主要责任在于主持研究的机构和/或研究人员的雇主。例如，在美国，研究机构通常负责在国家机构的指导和监督下进行调查，而在其他地方，如挪威，一个国家办公室或委员会负责调查不当行为指控。

为促进科研诚信而建立的国家指导方针和调查不当行为指控的正式结构相对较少，美国、丹麦、挪威、芬兰、澳大利亚、加拿大和德国是少数已经建立了国家科研诚信程序/准则和国家办公室监督其实施的国家。这些办公室在大小上各不相同，并在美国和斯堪的纳维亚采用了最正式和最发达的结构。

在美国，国家科学基金会监察长办公室和国家卫生研究院科研诚信办公室促进了由国家科学基金会和国家卫生研究院资助的健康和生物医学研究的科研诚信。调查小组和调查机构向研究机构提供政策指导和技术援助，并对机构提交的案例执行审查和监督职能。对不当行为的指

控进行初步调查的责任在于进行研究的所在机构，但这些机构必须向国家监督办公室报告所有指控和调查。从事联邦资助研究的机构还必须满足一系列合规要求，包括维护书面政策和程序，以处理研究不当指控。各机构还必须培育一个促进负责任研究和培训的研究环境，并防止不当行为。在国家科学基金会资助的情况下，接受资助的机构现在必须证明他们有到位的的良好研究行为培训措施。这一政策变化将对美国以外的由国家科学基金会部分资助的合作企业产生影响，在这种情况下此类程序和培训机制可能不存在。

整个欧洲都采取了更加多样化的方法，斯堪的纳维亚国家是最早建立国家科研诚信结构的国家之一。

• 丹麦科学欺诈委员会成立于 1992 年，该委员会由八名成员组成，其中包括一名高等法院法官。委员会对其作出调查结果的人保持匿名，接受调查的人可以向丹麦科学、技术和创新署提出上诉。

• 在一起严重的科学不端事件发生后，挪威于 2007 年成立了国家科学不端调查委员会。该委员会涵盖所有研究领域，涉及挪威私人或公共研究机构进行的研究。预防和处理有关研究不当行为的指控的主要责任仍然由研究机构承担，但如果一个案件被认为特别复杂，受到了公众的广泛关注，或涉及可能的利益冲突，它们可能会将调查转给委员会。在这种情况下，委员会将评估指控，决定是否需要进一步调查，并就是否发生了研究不当行为发表声明。制裁的责任在于研究机构。申诉可向挪威研究部提出，该部指定一个特设委员会处理申诉。如果挪威机构雇用的研究人员进行了研究，或者大量资金来自挪威，委员会也可以主动发起调查，并在国外调查案件。

英国科研诚信办公室（UKRIO）是一个独立的咨询机构，由英国大学主办，并得到卫生和生物医学研究的主要监管机构和资助者的支持。虽然它不是规管机构，也没有正式的法律权力，但它为雇主、研究

机构、研究人员和公众提供独立的支持、非强制性的建议和指引，以推广保持研科研诚信的良好做法。它出版了一套全面的研究行为守则和不当行为调查程序，并向其订阅者提供教育和培训，以及一个关于科研诚信问题的传播方案。

想要更全面地描述欧洲各国所采用的方法，请参阅 2008 年 ESF 报告《诚信管理：促进和维护欧洲良好研究实践的制度方法》。然而，应该强调的是，由于许多国家正在不断改进其结构，该调查需要不断更新。预计欧洲科研诚信办公室网络将代表欧洲的科研诚信从业者，将能够提供一个不断更新的网站，紧密得连续最新的变化。

4.5 结论

好的研究最终是建立在信任的基础上的——研究同事之间、学术机构和产业界之间的信任，以及研究团体中公众和政策制定者的信任。没有这样的信任，研究系统将很快陷入困境。对科学和学术的信任需要成为所有国家和机构的优先事项。研究界需要能够应用良好的研究实践，并必须准备好应对怀疑存在不当行为的情况。等待一个严重的不当行为案例来推动这样的行动是短视的，并有风险损害科学在社会中的地位。

保护科研诚信，同时又不扼杀研究的创造力，是一个持续的学习过程。ESF 的 MO 论坛审议还表明，不存在可以很容易地应用于所有欧洲国家的“一刀切”的科研诚信治理框架。每个国家的科学组织和研究机构应该讨论和发展自己的科研诚信治理结构，并适应该国的规模、资源和研究基础设施。

无论特定国家或机构采取何种方式，分享经验都极为重要。它可以帮助提供容易获得当地、国内和国际上的最佳做法；知识和经验的汇集将建立一个关于研究不当行为程度的数据体，以及在地方、国家、整个欧洲和其他地方处理和预防这一现象的措施。特别是在欧洲，缺乏可靠

的数据。像欧洲科研诚信办公室网络这样的网络为从业者提供了一个宝贵的国际论坛，以分享他们的经验，并确定和讨论围绕研科研诚信治理的问题。

其他信息共享工具包括建立一个网站或其他公共论坛，收集关于良好研究行为和指南等的高质量文件。这还可以包括将不当行为场景作为研究人员的教育工具。

综上所述，推广良好研究行为和预防不当行为与查处不当行为之间需要取得平衡。对欧洲现有框架的审查强调，有必要发展国家系统来支持地方实施，并就良好研究行为的所有要素提供培训和指导。没有一个单一的框架将适用于全欧洲，但本节试图确定应出现在一个可行的科研诚信治理结构的核心要素。

五、结论和建议

2010 年 11 月在罗马举行的第四次也是最后一次 MO 论坛会议之后，各方一致认为:

• ESF 管理委员会已经收到并批准了执行报告。下一步是要求 ESF 管理理事会正式批准 MO 论坛的建议，并要求所有 MO 论坛成员采用欧洲行为准则和报告的建议。还应要求欧洲国家研究理事会正式通过该守则。还应邀请 ESF 理事会接受执行计划。

• 应要求 MO 论坛成员将欧洲准则和经济合作与发展组织/全球科学论坛的文本纳入国际协议。

• 有必要采用欧洲准则，并在欧洲层面为框架计划 8 和欧洲研究理事会建立明确的科研诚信政策。ESF 与主要合作伙伴（如: 欧洲科学院）建议在欧洲不同级别（欧盟主席、专员及其内阁、总干事研究、欧洲议会、欧洲研究理事会和能源研究咨询委员会）的关键文本中纳入这一内容。同样，应该敦促其他欧洲组织采纳该守则。

• 应要求所有上述机构在其自身活动中支持并确认他们已采用《欧洲准则》和《实施建议》。特别是，它们应：

a. 实施《欧洲行为准则》；

b. 实施科研诚信治理框架；

c. 落实论坛的监测建议；

d. 确保在所有国际协议中插入适当的研究诚信条款。

• 要求 ESF 管理委员会要求所有 MO 论坛成员在 2012 年 1 月前提交报告，说明他们为实施科研诚信建议所做的工作。ESF 的 MO 论坛进一步会议将于 2012 年初召开，以分析应对措施，并决定接下来可能需要采取哪些进一步行动。这可能包括考虑是否需要定期更新《诚信管家》。

• 应与欧洲科学院、欧洲研究诚信办公室网络、出版道德委员会、欧洲大学协会、欧洲研究型大学联盟和其他适当组织合作开展专题研讨会。

Fostering Research Integrity in Europe

1. Introductory Note

Increasingly European researchers are collaborating across borders on joint research initiatives. Any doubt or distrust about the ethical standards employed calls into question the basis of our scientific understanding. With a diverse mix of research structures, funding systems and traditions across the continent, a common understanding of the demands of research integrity is essential. The European Code of Conduct for Research Integrity was developed to answer this need, involving members of the European Science Foundation and the All European Academies. It was welcomed at the second World Conference on Research Integrity in Singapore last July as an example of international coordination that builds a basis for a worldwide consensus about research integrity.

The ESF Member Organisation Forum on Research Integrity（MO Forum）was established following the first World Conference on Research Integrity held in Lisbon in September 2007 for which the ESF acted as co-organiser with the US Office of Research Integrity. It was clear that there had to be substantial follow-up at the European level to the whole issue of research integrity.

The aims and objectives of the MO Forum were：

Aims：

To create an output-orientated network that brought together ESF Member Organisations and others which play a key role in promoting and safeguarding research integrity（not including at this stage related issues of independence of researchers in contract research and ethical aspects）. It addressed both the individual aspects of research integrity and the structural science policy aspects（at least to the extent to which ESF Member Organisations are concerned）.

Objectives：

• To serve as a platform for various organisations to present each other's approaches, to discuss their strengths and shortcomings（if any）, and thus to act as a vehicle for exchange of good practice；

• To support and encourage organisations which do not yet have appropriate structures（but are interested in developing them）to learn from the experiences of others and to initiate debates in their respective communities on adequate models；

• To channel European input to the second World Conference on Research Integrity in Singapore in July 2010.

Scope and Structure：

Following the first World Conference on Research Integrity held in Lisbon in September 2007（co-organised by the ESF and ORI）, the ESF published its survey of research integrity structures in European countries – 'Stewards of Integrity' [European Science Foundation（2008）：Stewards of Integrity：Institutional Approaches to Promote and Safeguard Good Research Practice in Europe]. Following on from this, the ESF established an ESF Member Organisation Forum on Research Integrity that held its first workshop, 'From principles to practice', in Madrid on 17-18 November 2008. The objective of the meeting was to serve as a platform for MOs to exchange information on good practice, to support and encourage those organisations which did not have appropriate structures to develop such structures, to learn from others and initiate debates in their respective communities, and to channel European input to the second World Conference on Research Integrity. The outcome of that meeting was to establish four working groups to cover the following areas：

WG 1 'Raising awareness and sharing information'（chair：Sonia Ftacnikova, SK）：raising awareness and sharing good practices involving all stakeholders and developing platforms for continuous exchange of information on the various approaches to promote and safeguard research integrity（including efforts to promote research integrity in education and training）；

WG 2 'Code of Conduct'（chair：Pieter Drenth, NL）：WG 2 was requested to devise and formulate a European Code of Conduct to be used as a template for

national codes which define core values to be pursued and norms to be complied with in responsible research and which could be used as a template for national or institutional codes of conducts（at least in Europe）；

WG 3 'Setting up national structures'（chair： Maura Hiney, IE）：establishing a checklist for setting up national and institutional structures to promote good research practice and to deal with research misconduct. Countries（and institutions）that have not yet established mechanisms to promote and safeguard good research integrity can profit from the experiences of others that do have tested structures； and

WG 4 'Research on scientific integrity'（chair：Livia Puljak, HR）：to make recommendations on the kind of research that is needed regarding research integrity in order to know the prevalence of research misconduct and its causes, to explore the best ways to address this problem and to better understand research misconduct to help formulate evidence-based policy.

The MO Forum held four workshops（in Madrid, November 2008； in Strasbourg, October 2009, in conjunction with an ESF-ORI meeting on Good Research Practices and Research Integrity Training； in Split, March 2010； and in Rome, November 2010）. Many members of the MO Forum also attended the second World Conference on Research Integrity in Singapore in July 2010, of which ESF was again a sponsor.

It was envisaged that the four working groups would integrate their conclusions in a comprehensive strategy for safeguarding integrity in scientific research and practice nationally, as well as in the wider European context. The results of the work developed by those four Working Groups form the basis of this report.

The Executive Report of the MO Forum was published in June 2010 and was presented at the World Conference in Singapore where it was a significant input as a rare attempt to develop a coordinated approach to research integrity across many countries and involving many institutions and disciplines. It also includes the European Code of Conduct for Research Integrity.

The final results, including some of the recommendations formulated at the Rome Conference（November 2010）, were presented at the ESF Annual

Assembly in Strasbourg on 17 November 2010.

2. Executive Summary

2.1 Background and Rationale

Scientific and scholarly research is a shared enterprise, aimed at the discovery and dissemination of new knowledge. Any doubt or distrust about the ethical standards employed in this pursuit can materially put into question the basis of our scientific understanding. The present document draws attention to the necessary self-regulatory mechanisms of scientists and their institutions（employers, funders, etc.）to prevent such detrimental developments.

Research is highly competitive, because of peer pressure and the high stakes involved in the outcomes of the successful quest for new knowledge. Acknowledging possible shortcomings in the behaviour of researchers is necessary, but foregoing the principles of research integrity risks undermining the entire chain linking the creation of new knowledge in science to the creation of wealth and welfare in society.

Scientists and scholars may be in error, research may be incomplete, data may mislead, but the shared enterprise rests on a presumption of honest effort, of fair reporting, of collegiate integrity. There have been flagrant cases of deliberate dishonesty, but most researchers have tended to think of these as rare events. That is because it is believed that peer review and collegiate ethos, the process of challenge and the practice of questioning, sooner or later reveal the truth. As Arthur C. Clarke once said, “In the long run, there are no secrets in science. The universe will not cooperate in a cover-up.” This report aims at strengthening this ethos.

But there are uncomfortable facts to be faced. The world’s researchers now number in the millions. According to Nicholas H. Steneck1, consultant at the US Office of Research Integrity, the numbers of cases of research misconduct could number in the tens of thousands. “Studies suggest that as many as one in every 100 researchers engages in serious misconduct over the course of a three to five year period.”

In addition to fabrication, falsification and plagiarism, many other objectionable practices deserve attention. Some may have serious legal or moral consequences； others may create nuisance, discontent or procedural discord. Many of them may risk undermining public trust in research and science.

The term ‘research misconduct’ is meant to embrace many things, including insufficient care for the people, animals or objects that are the subject of or participants in research； breaches of confidentiality, violation of protocols, carelessness of the kind that leads to gross error and improprieties of publication involving conflict of interest or appropriation of ideas. Many of these unacceptable research practices are addressed in the European Code of Conduct for Research Integrity（section 2）. Sadly, many of these can be found in all aspects of research. Some represent failures of training for research that has become professionally more challenging and complex.“New researchers are not today routinely trained to deal with the challenges and complexities they face as professionals”, says Steneck.“This situation needs to be addressed.”

The situation needs to be addressed in Europe, where national research structures, funding systems and traditions may be diverse but where, increasingly, researchers have begun to collaborate, to coordinate initiatives and to build partnerships on a continent-wide scale. Therefore, beyond mutual respect for national diversity, there must be a common understanding of the demands of research integrity. The European Code of Conduct for Research Integrity, presented here, should serve as a reference point for all parts of the research spectrum. It could be the basis for developing national regulations where none exist, could complement existing codes of ethics and may be fit, in some cases, to enhance or supersede those already in operation. It is sufficiently inclusive to allow easy compliance with national and European legislative frameworks. A concern for research integrity begins first of all with the responsibilities of the individual, but places obligations on research institutions, research funders, learned societies, academies, editors and research efforts supported by the private sector.

In Europe, comparatively early efforts in awarenessraising and in offering guidelines to the research community and their institutions can be traced to the

European Science Foundation's（ESF）Science Policy Briefing on Good Scientific Practice in Research and Scholarship （2000）, and to the All European Academies's（ALLEA）Memorandum on Scientific Integrity（2003）. Global efforts include the work of OECD's Global Science Forum on Best Practices for Ensuring Scientific Integrity and Preventing Misconduct which focuses on issues related to international collaboration. The First World Conference on Research Integrity was held in Lisbon in 2007. It was initiated by the ESF and the US Office of Research Integrity, with backing from the EU Presidency and the European Commission. An ESF Member Organisation Forum was then established to take the issues forward and this report is the outcome of the investigations and debates in this context. It builds on an ESF survey issued in 2008（Stewards of Integrity – Institutional Approaches to Promote and Safeguard Good Research Practice in Europe）which highlighted key problems and the need for education and training to better equip the research community to deal with the issue raised.

The document was presented at the Second World Conference on Research Integrity, held in Singapore from 21 to 24 July 2010. It aims, fundamentally, at achieving an agreement on principles, and an understanding that compatibility of procedures is necessary for the European Research Area to develop and to play its part in global research collaboration.

2.2 European Code of Conduct for Research Integrity

This code – developed through a series of workshops involving the ESF（European Science Foundation）and ALLEA（All European Academies）– addresses the proper conduct and principled practice of systematic research in the natural and social sciences and the humanities. It is a canon for self-regulation, not a body of law. It is not intended to replace existing national or academic guidelines, but to represent Europe-wide agreement on a set of principles and priorities for the research community.

2.2.1 The Code

Researchers, public and private research organisations, universities and funding organisations must observe and promote the principles of integrity in

scientific and scholarly research.

These principles include：

- honesty in communication；
- reliability in performing research；
- objectivity；
- impartiality and independence；
- openness and accessibility；
- duty of care；
- fairness in providing references and giving credit； and
- responsibility for the scientists and researchers of the future.

Universities, institutes and all others who employ researchers, as well as agencies and organisations funding their scientific work, have a duty to ensure a prevailing culture of research integrity. This involves clear policies and procedures, training and mentoring of researchers, and robust management methods that ensure awareness and application of high standards as well as early identification and, wherever possible, prevention of any transgression.

Fabrication, falsification and the deliberate omission of unwelcome data are all serious violations of the ethos of research. Plagiarism is a violation of the rules of responsible conduct vis-à-vis other researchers and, indirectly, harmful for science as well. Institutions that fail to deal properly with such wrongdoing are also guilty. Credible allegations should always be investigated. Minor misdemeanours should always be reprimanded and corrected.

Investigation of allegations should be consistent with national law and natural justice. It should be fair, and speedy, and lead to proper outcomes and sanctions. Confidentiality should be observed where possible, and proportionate action taken where necessary. Investigations should be carried through to a conclusion, even when the alleged defaulter has left the institution.

Partners（both individual and institutional）in international collaborations should agree beforehand to cooperate to investigate suspected deviation from research integrity, while respecting the laws and sovereignty of the states of participants. In a world of increasing transnational, cross-sectional and interdisciplinary science, the work of OECD's Global Science Forum on Best

Practices for Ensuring Scientific Integrity and Preventing Misconduct can provide useful guidance in this respect.

2.2.2 The principles of research integrity

These require honesty in presenting goals and intentions, in reporting methods and procedures and in conveying interpretations. Research must be reliable and its communication fair and full. Objectivity requires facts capable of proof, and transparency in the handling of data. Researchers should be independent and impartial and communication with other researchers and with the public should be open and honest. All researchers have a duty of care for the humans, animals, the environment or the objects that they study. They must show fairness in providing references and giving credit for the work of others and must show responsibility for future generations in their supervision of young scientists and scholars.

2.2.3 Misconduct

Research misconduct is harmful for knowledge. It could mislead other researchers, it may threaten individuals or society – for instance if it becomes the basis for unsafe drugs or unwise legislation – and, by subverting the public's trust, it could lead to a disregard for or undesirable restrictions being imposed on research.

Research misconduct can appear in many guises：

• Fabrication involves making up results and recording them as if they were real；

• Falsification involves manipulating research processes or changing or omitting data；

• Plagiarism is the appropriation of other people's material without giving proper credit；

• Other forms of misconduct include failure to meet clear ethical and legal requirements such as misrepresentation of interests, breach of confidentiality, lack of informed consent and abuse of research subjects or materials. Misconduct also includes improper dealing with infringements, such as attempts to cover up misconduct and reprisals on whistleblowers；

• Minor misdemeanours may not lead to formal investigations, but are just as

damaging given their probable frequency, and should be corrected by teachers and mentors.

The response must be proportionate to the seriousness of the misconduct：as a rule it must be demonstrated that the misconduct was committed intentionally, knowingly or recklessly. Proof must be based on the preponderance of evidence. Research misconduct should not include honest errors or differences of opinion. Misbehaviour such as intimidation of students, misuse of funds and other behaviour that is already subject to universal legal and social penalties is unacceptable as well, but is not 'research misconduct' since it does not affect the integrity of the research record itself.

2.2.4 Good research practices

There are other failures to adhere to good practices – incorrect procedures, faulty data management, etc. – that may affect the public's trust in science. These should be taken seriously by the research community as well. Accordingly, data practices should preserve original data and make it accessible to colleagues. Deviations from research procedures include insufficient care for human subjects, animals or cultural objects； violation of protocols； failure to obtain informed consent； breach of confidentiality, etc. It is unacceptable to claim or grant undeserved authorship or deny deserved authorship. Other publication-related lapses could include repeated publication, salami-slicing or insufficient acknowledgement of contributors or sponsors. Reviewers and editors too should maintain their independence, declare any conflicts of interest, and be wary of personal bias and rivalry. Unjustified claims of authorship and ghost authorship are forms of falsification. An editor or reviewer who purloins ideas commits plagiarism. It is ethically unacceptable to cause pain or stress to those who take part in research, or to expose them to hazards without informed consent.

While principles of integrity, and the violation thereof, have a universal character, some rules for good practice may be subject to cultural differences, and should be part of a set of national or institutional guidelines. These cannot

easily be incorporated into a universal code of conduct. National guidelines for good research practice should, however, consider the following：

1. Data： All primary and secondary data should be stored in secure and

accessible form, documented and archived for a substantial period. It should be placed at the disposal of colleagues. The freedom of researchers to work with and talk to others should be guaranteed.

2. Procedures： All research should be designed and conducted in ways that avoid negligence, haste, carelessness and inattention. Researchers should try to

fulfil the promises made when they applied for funding. They should minimise impact on the environment and use resources efficiently. Clients or sponsors should be made aware of the legal and ethical obligations of the researcher, and of the importance of publication. Where legitimately required, researchers should respect the confidentiality of data. Researchers should properly account for grants or funding received.

3. Responsibility： All research subjects – human, animal or non-living – should be handled with respect and care. The health, safety or welfare of a community or collaborators should not be compromised. Researchers should be sensitive to their research subjects. Protocols that govern research into human subjects must not be violated. Animals should be used in research only after alternative approaches have proved inadequate. The expected benefits of such research must outweigh the harm or distress inflicted on an animal.

4. Publication： Results should be published in an open, transparent and accurate manner, at the earliest possible time, unless intellectual property considerations justify delay. All authors, unless otherwise specified, should be

fully responsible for the content of publication. Guest authorship and ghost authorship are not acceptable. The criteria for establishing the sequence of authors should be agreed by all, ideally at the start of the project. Contributions by collaborators and assistants should be acknowledged, with their permission. All authors should declare any conflict of interest. Intellectual contributions of others should be acknowledged and correctly cited. Honesty and accuracy should be maintained in communication with the public and the popular media. Financial and other support for research should be acknowledged.

5. Editorial responsibility： An editor or reviewer with a potential conflict of interest should withdraw from involvement with a given publication or disclose the conflict to the readership. Reviewers should provide accurate, objective,

substantiated and justifiable assessments, and maintain confidentiality. Reviewers should not, without permission, make use of material in submitted manuscripts. Reviewers who consider applications for funding, or applications by individuals for appointment or promotion or other recognition, should observe the same guidelines.

The primary responsibility for handling research misconduct is in the hands of those who employ the researchers. Such institutions should have a standing or ad hoc committee（s） to deal with allegations of misconduct. Academies of Sciences and other such bodies should adopt a code of conduct, with rules for handling alleged cases of misconduct, and expect members to abide by it. Researchers involved in international collaboration should agree to standards of research integrity as developed in this document and, where appropriate, adopt a formal collaboration protocol either ab initio or by using one drafted by the OECD Global Science Forum.

2.3 Defining and Implementing Awareness and Structures for Research Integrity

2.3.1 Promoting Research Integrity

All institutions defined above have an obligation to raise awareness and share information on Good Research Practice（GRP）to promote research integrity, and it is in everybody's interests to do so. Research conducted rigorously, respectfully and responsibly is integral to excellence. So research integrity and research excellence are complementary objectives.

ACADEMIES promote quality and interest in science and scholarship. As an institution, a National Academy is independent and authoritative, and is among those able to promote and develop, possibly also to implement, measures aimed at ensuring scientific integrity in a given national science system.

UNIVERSITIES and RESEARCH PERFORMING ORGANISATIONS have a role in encouraging good research practices and preventing unacceptable behaviour, and in dealing with allegations of research misconduct against their staff. They have a special responsibility for training young researchers and

students in good research citizenship.

FUNDING ORGANISATIONS have the obligation to promote good research practices and to ensure research integrity. They have the power to insist on these principles with researchers and research employers, and the policies to deal with malpractice. The fundamental principles of scientific practice and peer review safeguard the mutual trust indispensable for research.

SCIENCE JOURNALS and magazine editors have an interest in detecting plagiarism, fabrication, falsification and other fraudulent behaviour before publication. So they too must promote best practices and help detect misconduct.

The situation in countries around Europe with respect to research integrity varies widely as demonstrated in the ESF survey 'Stewards of Integrity'. For this document, a variety of institutions（funding agencies, academies, universities and faculties, journals, professional organisations, etc.）reported on their experiences and concerns.

Successful approaches

The ESF MO Forum undertook in 2010 a survey of attempts to promote GRP that found a number of successful approaches：

• Producing and disseminating articles, books, brochures on research integrity；

• Producing and promoting guidelines on good research practice and on investigations of allegations of research misconduct；

• Establishing websites and portals as resources for further study and teaching；

• Holding workshops, conferences, seminars, etc. On research integrity at the national or institutional level in order to launch debates；

• Establishing an adequate institutional framework, including ethical committees, research integrity bureaus（at the institutional and national level）；

• Introducing training programmes for advanced PhD students and other staff；

• Gathering of evidence on best practice elsewhere（surveys, etc.）；

• Surveys to monitor the implementation of GRP and training programmes.

Monitoring procedures

Institutions participating in the exercise also reported on a number of useful measures that can be taken to monitor compliance with the basic rules of research integrity and good research practice. These include：

• Checks on infrastructure and policies in universities and institutes（ ombudsman, committee on research integrity, procedures for handling allegations, protection of whistleblowers, mentoring, ethos of research groups, etc.）；

• Requiring universities and institutes to include research integrity, including numbers of allegations received and resolved, in their annual reports；

• Asking scientific journals to report yearly on misconduct or alleged misconduct；

• Analysing cases reported in general media, asking employers of accused researchers for further information；

• Occasional surveys of awareness in samples of students,scientists and scientific administrators；

• Measures of the number of hits on research integrity web pages and online resources；

• Checks of the numbers of participants who complete online training and numbers of training courses run in research integrity areas；

• Checks on the availability of mentoring programmes.

Difficulties

Even where the subject matter has been identified as being relevant, individuals and institutions report consistently on a number of difficulties in approaching the topic of research integrity. They include：

• Absence of clear definitions, especially in terms of unacceptable research practices；

• Misunderstanding of the difference and relationship between research integrity and general science ethics；

• Preconceived idea that cases of misconduct are rare and exceptional；

• Belief that the peer review process itself can identify misconduct；

• Uncertainty about the priorities between the need to deal with allegations

of research misconduct and the danger of reducing academic freedom；

• Claims that a proactive attitude towards good research practice and research integrity would add up to a higher administrative burden for researchers.At a more general level, it was reported that there is concern with a lack of resources for establishing effective national frameworks for dealing with research misconduct, and that the wide variety of different stakeholders（national and regional government, universities and research organisations, etc.）, with approaches which are not always congruent and yet overlapping responsibilities, makes it difficult to achieve overall, nation-wide approaches.

2.3.2 Developing a framework for research integrity governance

Core elements of a framework for research integrity governance

Globally-recognised guidelines, such as those developed by the ESF, ALLEA and OECD's Global Science Forum, can set out strong fundamental principles. The challenge in developing a nationally relevant framework for research integrity governance is to ensure that global principles can be translated into national policy and practice. The starting point in each country will be different but there is scope to enhance all existing systems. All systems need：

• A mandate： a clear and authoritative national statement,charter or legislative support to underpin research integrity governance structures. In devising such a mandate countries can draw on the experiences of others；

• Fair and transparent processes at both local and national level and a balance between prevention and sanction, with the emphasis on prevention, in whatever processes are adopted；

• Clearly-assigned roles and responsibilities for prevention, investigation and imposition of sanctions at local and national level.

In addition, there are a number of core requirements that should apply at an operational or functional level including：

a） Core requirements for embedding principles of good research practice and research integrity into research culture include：

• Mechanisms for prevention, education and awareness at all levels. These include, but are not confined to, training in GRP from the start of a career in science or scholarship and making research integrity an integral component of

supervision and mentoring；

• Robust procedures for data management, training in good practices in relation to data collection and centralised storage；

• Guidance for researchers and other stakeholders and tools for information sharing on training materials, guidelines and misconduct scenarios；

• Agreed procedures for sharing case information to establish a body of data on research misconduct locally, nationally and across Europe and to improve current procedures.

b）Core requirements for individuals and institutions where allegations of malpractice or poor research conduct have been made include：

• Procedures for investigation that are legally robust and enshrine minimum legal standards for the protection of the individual；

• Clear procedures for allegations, including agreement about who can raise a concern and how they can do this（anonymous, named）, the form in which it should be raised（verbal, written）and the authority to whom concerns should be addressed；

• Agreement at the outset on the transparency and/or confidentiality of misconduct investigations and clarity about when to reveal outcomes to third parties（press, national oversight bodies, funders）and under what circumstances；

• Decisions on procedures for appeal, and the types of appeal, for example, concerning either the scientific or the procedural elements of an investigation；

• Decisions on sanctions that can be imposed, appropriate to the level of departure from codes of GRP；

• Protection for whistleblowers, in law if necessary,since the success of research integrity governance structures depends on their willingness to step forward.

Models of research integrity governance

Broad approaches to research integrity governance in Europe and elsewhere include self-regulation and reliance on peer review； governance at an institutional level； provision of oversight by research funding agencies, professional associations and learned societies； and national oversight or more formal governance structures. The situation in most European countries is

complex, with more than one approach being adopted across institutions and national bodies at the same time.

The challenge for each institution, agency, society or country is to balance individual and local responsibility and structures on the one hand and national research integrity coordination or governance on the other. Such challenges are acute where there is no research integrity governance or oversight in place, or where governance happens at a strictly institutional or local level with no national coordination. Conversely, it can be observed that as a coordinated and nationwide agreed system emerges, the robustness of the governance structure increases.

Research integrity governance driven by national bodies

Oversight by research funding agencies, professional associations and learned societies is likely to be accepted by the research community as providing harmonised guidelines and independence and credibility in procedures. Such oversight can also facilitate an appeals mechanism and make it harder to hide cases. However, there are a number of difficulties. Many of these national bodies will not have the resources to monitor compliance. Institutions may resist external oversight. Such oversight may not cover both public and commercial activity. Regardless of who provides regional or national oversight, responsibility for implementation will still reside locally, with the attendant challenges and risks described above.

National research integrity governance structures

Properly constituted national research integrity governance structures can resolve many of the issues with self-regulation or oversight/regulation by research funding agencies, professional associations or learned societies. National offices can provide consistent advice, support and guidelines across both the public and private research sectors. They can also provide true independence for investigative processes and equality in access and treatment of cases, making conflicts of interest less likely. Importantly, national standing committees can develop professional competence. Moreover, their authority for dealing with GRP and investigations is clear to everyone. Such research integrity governance can also facilitate international cooperation and mutual learning. The emerging framework should make the best use of opportunities to establish links with other

national offices： currently, ENRIO （European Network of Research Intergity Offices）offers such a platform.

Steps in adopting a research integrity governance structure

The good name of science and scholarship needs to be a priority for all nations and institutions, although in some instances this does not occur. The research community has to be prepared to deal with suspicions of misconduct. At an international level, organisations such as the ESF, ALLEA, the OECD and others play an important role in promoting research integrity and identifying universally acceptable guidelines on which national institutions and governments can build robust research integrity governance structures. These guidelines should also be linked to COPE and other professional editorial body guidelines to bring external pressure to bear on the academic system to initiate change. The aim is to ensure that the entire academic system, from knowledge production to publication, adheres to the same high standards, and has a clear point of reference for initiating change wherever necessary. In addition, the role

of national champions who are willing and able to drive change in their own country cannot be underestimated.

The deliberations of the ESF Member Organisation Forum suggest that no “one size fits all” framework of research integrity governance can be applied across all European countries. There is national and institutional diversity in the definition of misconduct and in the preventive measures applied to ensure the integrity of a country’s national research system.

The US, Denmark, Norway, Finland, Australia, Canada and Germany are among the small number of countries with established national research integrity procedures or guidelines and national offices to oversee their application. These offices vary in size and authority, with the most developed structures found in the US and the Nordic Countries.

Each country must develop its own research integrity governance structures, suited to its size, resources and research infrastructure. Nonetheless, there are core requirements that must be incorporated in order to create a workable research integrity governance structure. Such commonality may help integrate national and local systems and spread the doctrine of ‘good science’. Shared experience is

extremely important locally, nationally and internationally. Pooled national and international experience will build up a body of data on research misconduct across Europe. Networks such as the European Network

of Research Integrity Offices（ENRIO）provide an important forum for sharing experience and identifying issues around research integrity governance.

In summary, there is a balance to be struck between promoting GRP on the one hand, and investigating and punishing misconduct on the other. There is no single framework that will have pan-European application but this section has attempted to identify the elements that should be present in a workable research integrity governance structure.

2.4 Need for Further Evidence on Research Integrity

Little is known about the causes and significance of practices that lead to research misconduct or about successful methods to ensure high standards of integrity in research. There is a lack of data about the incidence of research misconduct worldwide and in Europe. A variety of approaches should be encouraged.

Promotion of research on research integrity

Prevention of research misconduct is the ultimate goal. Scholarly research is the tool for understanding misconduct and improper research practices and the reasons behind them. Coupled with this is the need to encourage the publication of such studies of both policy issues and scientific behaviour. Both research and its literature will facilitate greater attention from relevant stakeholders. To prevent research misconduct, we need to know more about research integrity. Funding bodies, politicians, academies, universities, ESF, ENRIO, journal editors and researchers themselves should all be involved in promoting studies of research integrity. Many European countries share common values, but local culture and values should also be respected when providing recommendations.At a European level, the European Commission could include such research in the area of ‘Science and Society’ and ESF could also promote studies on research systems, including integrity, within its networking programmes. Continuing support of the World Conference on Research Integrity is especially important.

2.5 Next Steps：recommendations for the future

• Promoting European standards – ESF international guidelines. These should cover not just fabrication, falsification and plagiarism but also GRP and the more difficult areas of conflict of interest, misrepresentation, duty of care and informed consent. The Code and Guidelines are a fundamental part of such an approach and should be endorsed by both ESF and its Member Organisations.

• Leaders of ESF projects should agree to comply with ESF guidelines. This would be a constituent part of the funding agreement. This will help to introduce the European standard especially to countries that do not yet have their own national guidelines. ESF recommendations should also be adopted by its Member Organisations, and discussions with the European Commission should aim at seeing them adopted equally for its research activities including the FP, the ERC and the EIT.

• Consideration should be given to ESF to act as a European clearing house to provide information about available resources. It should provide a European database（web pages, online training, case-study material, etc.）relating to components of research integrity such as publication and authorship practices, mentoring, data management, etc. A common approach could be adapted to national circumstances.

• Repeat a quinquennial survey and analysis for revised editions of 'Stewards of Integrity'. Many aspects of research integrity improvement need to be compared（see section above）. ESF, which represents academies, funding and performing institutions of research in a large number of countries, is a natural place for future discussion.

• The possibility of limited funding for collaborative work on research integrity and the encouragement of Member Organisations to introduce grants on the subject of research integrity might also be considered.

• The coordination of national procedures in Europe for preventing misconduct and coping with fraudulent publications is an issue which will require further consideration.

Continuing support for the World Conference on Research Integrity

The first World Conference on Research Integrity was very successful in raising awareness about this issue. ESF should support the continuation of the World Conferences on Research Integrity. They are important fora for exchange of good practice and experiences and help carry the message beyond the circle of the institutions and individuals already involved with such work. An important part of future conferences should be presentations on new research on integrity and misconduct.

3. The European Code of Conduct for Research Integrity

3.1 Preface

The present proposal for a Code of Conduct has resulted from a series of discussions within the European Science Foundation（ESF） member forum Working Group 2； the standing committee on science and ethics of All European Academies（ALLEA）； and a meeting of representatives of ALLEA's member Academies（Berne, 29-30 June 2009）. The discussions were based on various drafts of a discussion paper, distributed both within the WG2 and ALLEA.

ALLEA has taken up the gauntlet formulated in the ESF briefing on Good scientific practice in research and scholarship, in which the following was suggested（art. 60）：“National academies are well placed to provide leadership in the pursuit of scientific integrity and good practice. They are often the most appropriate independent body to establish and support a national committee for scientific ethics and to nominate independent experts on panels to investigating cases of alleged misconduct. Those academies that employ scientists have an added responsibility of formulating and managing their own guidelines and codes of practice”.

Analysis has been made of a large number of existing national and international codes, ethical guidelines and regulations with respect to scientific integrity, as produced by academies, research foundations and other organisations around the world concerned with the scientific and ethical quality of research. In particular the US ORI publication Introduction to the responsible conduct of

research, the OECD-report on Best practices for ensuring scientific integrity and preventing misconduct5, and the text of an advice of the Coordinating committee for facilitating international misconduct investigations to the Global Science Forum of the OECD（submitted to the 20th meeting of the GSF, Feb. 2009）have lent support to the propositions developed in this paper. Moreover, the thoughts expressed in this paper are consistent with both ALLEA's Memorandum on Scientific Integrity, and the European Commission's Ethics for Researchers.

In many academies, universities and funding organisations some Code or Guidelines for research integrity and good research practices are already in effect. It is not the intention to replace these with the Code presented here. We expect these Codes or Guidelines to be rather in line with the latter. In some cases some additions or improvements on the basis of the present proposal may be considered. However, in countries where such a Code does not yet exist or is still being developed, this new Code may have a stimulating effect. This document represents an agreement on a set of principles and priorities at a given point in time：changing national or institutional frameworks or scientific and technological developments may make some regular adjustments necessary.

Naturally the confinement to a European agreement on a Code of Conduct does not imply that these principles and guidelines are to remain restricted to the European scientific community. Hopefully they will be a step towards a globally accepted code to be conceived by world science organisations such as IAP（the International Academy Panel）, or the International Council for Science（ICSU）. The objective is to stimulate the emergence of institutional settings that strengthen scientific integrity, and to set standards across Europe that can, eventually, be held valid and implemented world wide.

In the following we will propose a Code of Conduct, preceded by a short preamble, and followed by an extensive elucidation； a suggested list of guidelines for good research practice； and suggestions for handling allegations of misconduct and for dealing with the issue of research integrity in international collaborative research.

3.2 The Code of Conduct

3.2.1 Preamble

This Code of Conduct is not a body of law, but rather a canon for self regulation. It is a basic responsibility of the scientific community to formulate the principles and virtues of scientific and scholarly research, to define its criteria for proper research behaviour, and to set its own house in order in case scientific integrity is threatened.

Science as the process of knowledge augmentation is embedded in a wider socio-ethical context, and scientists must be aware of their specific responsibility towards society and the welfare of mankind. They bear responsibility for the choice of subjects to be investigated and its consequences, for proper care and treatment concerning the objects of research, and attention and concern with respect to practical applications and use of their research

results. In this Code, however, we confine ourselves to standards of integrity while conducting research, and do not consider this wider socio-ethical responsibility.

3.2.2 Code of Conduct

Science, including natural and social sciences as well as humanities, is the systematised knowledge obtained through observation and experimentation, study and thinking. Scientific research is carried out to determine the nature and principles of what is being studied. In spite of their differences in content and methods all sciences have a common characteristic： they depend on arguments and evidence, i.e. observations of nature or of humans and their actions and products.

Researchers, research institutes, universities, academies and funding organisations commit themselves to observe and to promote the principles of scientific integrity. These include： honesty in reporting and communicating, reliability in performing research, objectivity, impartiality and independence, openness and accessibility, duty of care, fairness in providing references and giving credits, and responsibility for future science generations. Research institutes, funding organisations, academies and other actors in the field of

scientific research have to adhere to appropriate standards for data management and preservation of records and data and to high ethical standards in dealing with research participants.

Research employers（universities, institutes and other research performing organisations） also have a responsibility to ensure that a culture of research integrity prevails. This includes clear policies and procedures, training and mentoring of researchers at all stages of their careers, and robust management procedures to ensure that high standards are observed and any transgression is identified at an early stage.

Fabrication and falsification, including misrepresentation and deliberately omitting unwelcome facts or data, are among the most serious violations of the ethos of science. Also plagiarism is an unacceptable form of misbehaviour, and a violation against other researchers.

Institutes or organisations that fail to deal properly with such wrongdoing are also guilty of dereliction of duty. All allegations should be properly assessed, and credible allegations should be investigated fully, with corrective actions taken if allegations are confirmed.

Minor misdemeanours, reflecting only poor performance by researchers as opposed to serious misconduct – some adjustment or selecting of data or ‘adaptation’ of a figure – may not give cause to a formal charge. Minor misdemeanours by students or junior researchers should however always be reprimanded and corrected by teachers or mentors. Minor misdemeanours by more experienced researchers that leads to misrepresentation may be treated more seriously, and if repeated should be considered as misconduct.In addition to the violation of the fundamental principles of responsible science many other forms of poor and inappropriate practices in science research deserve attention. These include poor data practices and inadequate data management, inappropriate research procedures, including questionable procedures for obtaining informed consent, insufficient respect and care for participants in the research, improper research design and carelessness in observation and analysis, unsuitable authorship or publishing practices, and reviewing and editorial derelictions. Some of these are very serious and discreditable, e.g. abuse of ethical requirements and

of trust in relation to the public, research subjects or other participants in the research. However, unlike the fundamental principles of scientific integrity and the violation thereof, which have a universal character, such practices may be subject to different national traditions, legislative regulations or institutional provisions. A required system of regulations of good practice in research should, therefore,（except for gross violations of ethical principles or the law）not be part of a universal Code of Conduct, but should be developed in the form of national Good Practice Rules, that would recognise the legitimate differences between national or institutional systems. The enclosed list of recommendations should be used as a guideline for the formulation of such national Good Practice Rules.

Investigations of research misconduct allegations should be consistent with national laws of the country in which the investigations are conducted. What is required is a due and fair process, that is uniform and sufficiently rapid, and leads to proper outcomes and sanctions. The investigations must be carried out in accordance with the highest standards of process integrity, uniformity within one domain of jurisdiction, and fairness to all parties. Confidentiality should be observed as much as possible, unnecessary detriment to reputations should be avoided, and a proportionate action should be taken against persons found to have committed research misconduct. Wherever possible precaution should be taken to ensure that investigations are carried through to a conclusion. They should not cease, leaving questions unresolved, merely because the defaulter has left the institution.

In international collaboration partners should agree to conduct their research according to the same standards of research integrity, and to bring any suspected deviation from these standards, in particular alleged research misconduct, to the immediate attention of the project leader（s）（and of the senior responsible officer in the university or institute （employer）, in order for it to be investigated according to the policies and procedures of the partner with the primary responsibility, while respecting the laws and sovereignty of the States of all participating parties. In large scale, funded international projects the promotion of good practice and the handling of possible cases of misconduct, as recommended by the coordinating committee of the OECD Global Science Forum, should be

followed. The boiler plate text, recommended by this committee, should be embodied in the formal documents that establish the collaborative project.

3.3 Background and Elucidation

In this section a more extensive elucidation of the somewhat condensed Code of Conduct, presented above, is given. The nature of science and scholarship, the values to be fostered in scientific and scholarly research, the various discreditable forms of misconduct will be discussed, and procedures for dealing with allegations of misconduct and rules for good research practice will be recommended.

3.3.1 Nature of science and scholarship

In a broad sense science（in Latin scientia is knowledge）is the systematised knowledge obtained through observation and experimentation, study and thinking. It is rooted in human curiosity, the wish to understand the physical, biological and social worlds as well as the human mind and its products. Science aims at deepening our understanding and extending our knowledge beyond what is already known. The term ‘science’ is normally applied only to the natural and social sciences； in this document it will be applied in a broader sense, like the German word ‘Wissenschaft’, which applies also to the humanities. Of course, there are differences between the various disciplines, sometimes even indicated as ‘cultural’, but in this discussion emphasis will be laid on the communalities rather than the disparities between the disciplines.

Scientific research is carried out in order to determine the nature and principles of what is being studied. Such research is diverse and multifaceted and cannot be captured in a single factual and normative description. However, although they may differ in methods and traditions, all sciences have a fundamental characteristic in common：they depend on argument and evidence, i.e. observations of nature, or of humans and their actions and products.

Science is not an enterprise carried out in isolation. Research cannot be done without drawing upon the work of other scientists and scholars； and in most cases it requires collaborating with others（cf. Merton’s10 communalism）. And this collaboration assumes ever more an international character. It is also the

scientific community that determines appropriate methods of research and the validation of findings. The contribution of scientific research to the extension of human knowledge can, therefore, only take place if its results are presented to others in such a way that they can judge their validity（Merton’s organised scepticism）.

There is another connection with the outside world. Not only do social and political forces affect the directions of research, science itself also affects greatly societal developments. The impact of science, now extending to nearly all fields of knowledge and its applications, has contributed immensely to society, even though its results can be and have been misused at times. It is the responsibility of scientists and researchers to do what they can to ensure that research is for the universal well being of mankind and the good of society.

Coercion of powerful persons or institutions, religious or political pressure, economic or financial interests can corrupt science. Science should, therefore, be as ‘disinterested’ and independent as possible and always impartial, and should have the freedom to adhere to its own laws and criteria. At the same time we have to acknowledge that scientists operate in a value-bound context. Their paradigmatic presumptions, their choice of subjects to be studied, the way they collect their data, the impact of their discoveries on the society all refer to the ethical and social context in which science proceeds.

3.3.2 Science and ethics

The ethical/social values and conditions referred to in the previous section accentuate again the ethical and social responsibility of the scientist. A distinction should be made between two categories of issues：problems related to science and society, emphasising the socio-ethical context of research, and problems related to scientific integrity, emphasising standards when conducting research. There is, of course, no perfect watershed between the two categories. Some forms of misconduct may have serious consequences for the health or wellbeing of citizens, and can, therefore, be seen as unethical in the broader sense of the word, but in the light of a discussion on a Code of Conduct the distinction may be clarifying.Any ethical questions arise when science is regarded in a wider ethical/social context. Is the subject worthy of investigation? What are the

consequences of such research? Could the research result in harm for people, nature or society, or be in conflict with basic human values? Is the

research sufficiently independent of interested parties? Could a university or laboratory become too dependent on sponsored contract research? Could the researcher guard against the improper or selective use and misinterpretation of their findings, or against objectionable applications of their discoveries?

This document will not deal with this wider ethical context of science, but focus on the second category, the responsible conduct of research.

3.3.3 Integrity in science and scholarship：

principles

Both the definition of scientific misconduct and the specification for proper scientific practice are based upon principles of scientific integrity. These are principles that all scientific and scholarly researchers and practitioners should observe individually, among each other and toward the outside world. These principles include the following：

• Honesty in presenting research goals and intentions, in precise and nuanced reporting on research methods and procedures, and in conveying valid interpretations and justifiable claims with respect to possible applications of research results.

• Reliability in performing research （meticulous, careful and attentive to detail）, and in communication of the results （fair and full and unbiased reporting）.

• Objectivity：interpretations and conclusions must be founded on facts and data capable of proof and secondary review； there should be transparency in the collection, analysis and interpretation of data, and verifiability of the scientific reasoning.

• Impartiality and independence from commissioning or interested parties, from ideological or political pressure groups, and from economic or financial interests.

• Open communication, in discussing the work with other scientists, in contributing to public knowledge through publication of the findings, in honest communication to the general public. This openness presupposes a proper storage

and availability of data, and accessibility for interested colleagues.

• Duty of care for participants in and the subjects of research, be they human beings, animals, the environment or cultural objects. Research on human subjects and animals should always rest on the principles of respect and duty of care.

• Fairness, in providing proper references and giving due credits to the work of others, in treating colleagues with integrity and honesty,

• Responsibility for future science generations. The education of young scientists and scholars requires binding standards for mentorship and supervision.

3.3.4 Integrity in science and scholarship：

misconduct

Violating these basic norms leads to research misconduct, which is the crux of inappropriate behaviour in science. Research misconduct is damaging to science, because it may create false leads for other scientists or the results may not be replicable, resulting in a continuation of the deception. It is also harmful to individuals and society： fraudulent research may result in the release and use of unsafe drugs, in the production of deficient products, inadequate instruments or erroneous procedures. Furthermore, if policy or legislation is based on the results of fraudulent research, harmful consequences are not inconceivable. But damage is also done through the subversion of the public’s

trust in science. The credibility of science would decline and trust in science as a dependable source of information and advice in respect of numerous decisions, so important for the welfare of mankind and society（environment,

health, security, energy）, would be subverted. This could lead to undesirable restrictions on permissible research, which could further damage the pursuit of knowledge.

There is some empirical evidence that there is an increasing incidence of research misconduct. Pressure to publish, commercialisation, greater competition for funds, more opportunities for instance through the internet, evaluation practices, and the current career system for scientists, may all contriute to this unfortunate development.

The two most serious violations of the ethos of science are fabrication and falsification. Fabrication is making up results and recording or reporting them.

Falsification is manipulating research processes or changing or omitting data. Fabrication and falsification can also arise in the reporting of other researcher's results, in the reporting of expert opinion and in the public dissemination of science. A third category of misdemeanour is plagiarism in proposing, performing, or reviewing research, or in reporting research results. Plagiarism is the appropriation of another person's ideas, research results or words without giving appropriate credit. The precise wording of an idea or explanation or illustrative material（such as original figures and photographs, as well as lengthy tables）in textbooks or popular material are protected by copyright laws, but nevertheless can be subject to plagiarism. Plagiarism is of a different order since it is supposed to be more injurious to fellow scientists than to science as such. However, we have seen that openness is one of the basic integrity principles, and that progress in science depends on communication and discussion among fellow scientists and on a well functioning peer-review system. And if scientists would hesitate or even refuse to practice this openness and communication for fear of not being recognised as devisor or author the quality of science would suffer as well.

Also improper dealing with such infringement of principles of integrity（attempts to cover up, reprisals to whistle-blowers and violations of due process）can be classified as misconduct. In general it should be underlined that research institutes, funders, academies, universities and other actors conducting and administering research have the duty to promote good research management so that research integrity is instilled into the culture.

It is generally accepted that the primary responsibility for handling cases of misconduct is in the hands of the employers of scientists doing research. Frequently this concerns the institute or university where the accused researcher works. These institutions should have a standing committee that deals with misconduct, or establish an ad hoc committee in case a serious allegation is brought forward.

Furthermore, there is a general consensus on the need for a due and fair process, that is uniform and sufficiently rapid, and leads to proper outcomes and sanctions. A coordinating committee for facilitating international research misconduct investigations of the OECD has formulated a number of overarching

principles for investigating research misconduct in international collaborative projects, that can be adopted for general application. Annex I contains recommended principles that follow the main lines of the OECD recommendations.

Responses will depend on the seriousness of the research misconduct. In this respect the level of intent of the misconduct, the consequences of the behaviour, and other aggravating and mitigating factors should be considered. It has to be shown that the misconduct was committed intentionally, knowingly, or recklessly. As standard proof for the culpability of a suspected researcher ‘preponderance of evidence’ should be applied.

It should be stipulated that research misconduct does not include honest errors or differences in opinion.It should be recognised that the demarcation line between unacceptable and still acceptable behaviour is not always clear and beyond academic debate. Where does one draw the line between verification on a too small sample and the illustration of an argument with ‘case’ data? Where is the boundary between plagiarism and careless citation? Was an incorrect, but ‘favourable’ statistical technique truly chosen deliberately? Was a biased selection of data meant to start a scientific discussion or intended to present a full review of the evidence?

In the literature another class of misconduct is discussed, the ‘questionable research practices’（QRP）. Three groups of misbehaviour fall within QRP：Firstly：personal misconduct：intimidation of students, harassment, discrimination, insensitivity to social or cultural norms in doing research, misuse of funds, etc. Although we deal with undesirable and, at times, unacceptable conduct here it is not ‘scientific misconduct’, since it does not affect the integrity of the research record. Much of this misbehaviour is subject to generally applicable legal and social penalties that apply to everyone.

Secondly： a varied group of bad research practices, such as bad data management, incorrect research procedures, or some publication related misconduct. Bad practices are not acceptable and often harmful to the public’s trust in science. They need correction indeed, but are not necessarily basic infringements of scientific integrity. The next section will deal with this category.

In the third place minor misdemeanours that may not lead to formal allegations and investigations, but are just as damaging given their probable frequency：some ‘adjustment’ of data, cutting a corner, omitting an unwelcome observation… It should be clear that here we deal with unacceptable violations of the principles of scientific integrity：it is falsification in statu nascendi. If it occurs with students or junior scientists, it should be corrected through proper supervision and mentorship. With more experienced

researchers, especially if seen to be repeated, it should be treated more seriously.

It should be emphasised that the principles discussed in the previous section and the infringements defined in this section refer to fundamental and universal norms for responsible conduct in research. There is no need for cultural or regional adaptations or compromises in a Code of Conduct that encompasses these principles and infringements.

3.3.5 Good practices

In addition to fabrication, falsification and plagiarism many other forms of objectionable practices in scientific research deserve attention. Some of them have serious moral or legal consequences, others may create nuisance, discontent or procedural dissension. Many of them may undermine public trust in science same as basic infringements of scientific integrity, and should therefore be taken seriously by the scientific community. The following categories may be distinguished：

1. Data practices, including data management and storage, placing data at the disposal of colleagues who want to replicate the findings, adequate preservation of original data.

2. Research procedures. Deviations from desired practices include insufficient care for research subjects, insufficient respect to human subjects, animals, the environment, or cultural heritage； violation of protocols； failure to obtain informed consent； insufficient privacy protection； improper use of laboratory animals； or breach of trust（e.g. confidentiality）. Improper research design, carelessness in experimentation and calculations that lead to gross errors, may also be classified under this heading, although the partition-wall between

incompetence and dishonesty may be rather thin here.

3. Publication-related conduct, including authorship practices. It is unacceptable to claim or grant undeserved authorship and to deny deserved authorship, or to inadequately allocate credit. Breaching of publishing rules, such as repeated publication, salami-slicing of publication, no or a too long delay in publication, or insufficient acknowledgement of contributors or sponsors, fall within this category as well.

4. Reviewing and editorial issues, including independence and conflict of interests, personal bias and rivalry, appropriation of ideas.

Again, the dividing line between acceptable and not acceptable practices is somewhat vague, and may vary over nations, regions or disciplines. But there is also a thin borderline between some violations of these practices and the serious types of misconduct, as discussed in section 3.3.4. Unjustified claimed authorship and ghost authorship are forms of falsification, purloining ideas as an editor or reviewer is plagiarism, causing pain or stress to research participants or to expose them to hazards without informed consent is certainly ethically unacceptable behaviour. But in general these ‘good practices’ refer to practical rules and arrangements in conducting, administering and reporting research.

Unlike the fundamental principles of scientific integrity and the violating of these principles through fabrication, falsification or plagiarism, which have a universal character, good practices as outlined above may be subject to cultural differences： definitions, traditions, legislative regulations and institutional provisions may vary over nations or regions, sometimes also over disciplines. A required system of regulations of good practices in research should, therefore, not be part of a universal Code of Conduct. It should rather be developed in the form of national or institutional Good Practice Rules, recognising the legitimate differences between national, disciplinary or institutional systems. Nevertheless a list of issues to be addressed in such Rules（see sub 3.4 below）should be provided,including recommendations on how to deal with them. In general such recommendations are based on general assent, but, as said, rules of procedure must allow for national differences and cannot claim catholicity.

3.4 Guidelines for Good Practice Rules

In these guidelines the following categories of good practices in scientific and scholarly research are distinguished：proper data practices, proper（technical as well as responsible）research procedures, well-considered publication-related conduct and responsible reviewing and editorial procedures.

Each country should adopt, amend or supplement these recommendations in accordance with its legislative requirements or traditions and compose an own set of Good Practice Rules. Then the scientific society will require all its members to adhere to these Rules, and will also ask its institutes and scientific organisations to require their own members to comply.

1. Good data practices：availability and access

- All primary and secondary data should be stored in a secure and accessible form.

- Original scientific or scholarly research data should be documented and archived for a substantial period（at least 5 years, and preferably 10 years）.

- Research data should be placed at the disposal of colleagues who want to replicate the study or elaborate on its findings.

- Freedom of movement of scientists, the right to peaceably and voluntarily associate with other scientists, and the freedom of expression and communication should be guaranteed.

2. Proper research procedures

- All research should be designed and carried out in a careful and well considered manner； negligence, haste, carelessness, and inattention should be avoided, so as to prevent human errors.

- Researchers should try to deliver what has been promised in the application for support or funding.

- Researchers must seek to minify any harmful impact on the environment, and should be aware of the need for sustainable management of resources； this implies an efficient deployment of the （financial and other） resources, and minimisation of waste.

- Clients and/or sponsors should be alerted to the ethical and legal

obligations of the researcher, and to the possible restrictions this may imply.

- Clients and/or sponsors should be made aware of the vital importance of publication of the research findings.

- Confidentiality of data or findings should be respected by the researcher when it is legitimately required by the client or employer.

- Proper account will be given to the sponsor in case a grant or co-funding was received for the research.

3. Responsible research procedures

- All research subjects, be they human, animal, cultural, biological, environmental or physical, should be handled with respect and care.

- The health, safety or welfare of the community, or of collaborators and others connected with the research, should not be compromised.

- Sensitivity to age, gender, culture, religion, ethnic origin and social class of research subjects should be evinced.

- Human subject protocols should not be violated： this implies complying with the requirement of informed consent on the basis of adequate and appropriate information, and to voluntary agreement to participate, treating personal information with highest possible confidentiality, avoiding unnecessary deception, and using the obtained information only for the purpose of the investigation.

- The use of animals in research is acceptable only if alternative ways to achieve the results have been investigated and have been found inadequate； any harm or distress to be inflicted on an animal must be outweighed by the realistic expected benefits and must be minimised as much as possible.

4. Publication-related conduct

- Researchers should publish the results and interpretations of their research in an open, honest, transparent and accurate manner.

- Researchers should strive to ensure the earliest possible publication of the results of their research, unless commercial or intellectual property considerations （e.g. patent application）justify delay.

- Authorship should only be based on a creative and significant contribution to the research（i.e. contribution to the design, data collection, data analysis, or

reporting, not for general supervision of a research group or editing of text）. Guest authorship（i.e. listing authors who do not qualify）or ghost authorship（i.e. omitting individuals who meet authorship criteria）are not acceptable. All authors are fully responsible for the content of the publication, unless it is specified they are responsible only for a specific part of the study and publication.

- Sequence of authors should be agreed by all authors, ideally at the start of the project or the initiation of the article/monograph, and may follow national and/or disciplinary codes. The criteria for deciding the order of authors should be agreed at the start of the project or writing.

- The work and contribution of collaborators and assistants should be acknowledged if appropriate, with their permission.

- All authors should declare any relevant conflict of interest, which may be financial, commercial, personal, academic, or political.

- Important work and intellectual contributions of others that have influenced the reported research should be appropriately acknowledged. Related work should be correctly cited. References should be restricted to（paper or electronically）printed publications and publications ‘in print’.

- In communication with the general public and in popular media the same standards of honesty and accuracy should be maintained； any attempt to exaggerate the importance and practical applicability of the findings should be resisted.

- Publication of the same（or substantial parts of the same）work in different journals is acceptable only with the consent of the editors of the journals and where proper reference is made to the first publication. In the author’s CV such related articles must be mentioned as one item.

- Financial or other types of support for the research and its publication should be properly mentioned and acknowledged.

5. Reviewing and editorial issues

- An editor or reviewer who has a relevant potential conflict of interest – which may be personal, academic, political, commercial or financial – should, ideally, withdraw from involvement in any publication decision. If the conflict is considered minor or unavoidable it should be disclosed to the readership.

- Reviewers should provide thorough, accurate, objective, and justifiable assessments in a timely manner.

- In the review of a manuscript, confidentiality must be maintained.

- Reviewers and editors shall not make any use of the data or interpretations presented in submitted manuscripts without the author’s permission.

- The same standards and rules apply in the review process with regard to projects or programmes submitted for funding, rewards or reconnaissance purposes.

- The same standards and rules apply in the review process of individuals or institutions for appointments, promotion, awards or other forms of recognition.

3.5 International Collaborative Research

International scientific collaboration is increasing sharply, not only because of the growth of international funding and the stimulation of modern communication technology, but also because science itself has developed into a truly collaborative and international activity. Common agreement on standards of scientific integrity, and on rules and procedures to deal with cases of misconduct, is of crucial importance in international research as well. This is the main argument for an internationally accepted Code of Conduct.

In international collaboration partners should agree to conduct their research according to the standards of research integrity as developed in this document, and to bring any suspected deviation from these standards, in particular alleged research misconduct, to the immediate attention of the project leader（s）and senior responsible officer in the university or research institute（employer）. Such a case should be investigated according to the policies and procedures of the partner with the primary responsibility for the project, while respecting the laws and sovereignty of the States of all participating parties.

In formal, large scale, and often externally funded international research projects there may be questions as to which country should conduct the investigation if allegations of misconduct are raised, and how； and, even more

importantly, what is to happen when the relevant national policies are at odds with each other. The Coordinating Committee of the OECD Global Science

Forum, referred to sub 3.3.5, recommends the establishment of an agreement for collaborative research that addresses the promotion of responsible conduct in research and describes the procedures for the investigation of allegations of research misconduct within the project. The Committee has produced a boilerplate text for International Agreements, which should be embodied in the formal documents that establish the collaborative project. This boilerplate text is included under Annex II.

Annex I：

Recommended Principles for Investigating Research Misconduct

Integrity of the process

• Investigations into research misconduct allegations must be fair, comprehensive and conducted expediently but without compromising accuracy, objectivity, and thoroughness.

• Those parties involved in the procedure must ensure that any interests they have which might constitute a conflict of interest are disclosed and managed.

• Detailed and confidential records will be maintained on all aspects of the procedure.

Uniformity

• Procedures for dealing with misconduct should be spelled out in sufficient detail so that the transparency of the process and uniformity within one domain of jurisdiction from one case to another is ensured.

Fairness

• Investigation of research misconduct allegations should be conducted in a manner that is fair to all parties and in accordance with relevant laws.

• Persons accused of research misconduct must be given full details of the allegation（s）in writing and allowed a fair process for responding to allegations, asking questions, presenting evidence, calling witnesses, and providing responses to information presented.

• Allow witnesses to be accompanied by or seek advice and assistance from

anyone of their choosing.

• Proportionate action should be taken against persons found to have committed research misconduct.

• Any action（s）taken should be subject to appeal. Of course, there should be an authority issuing the final decision.

Confidentiality

• The procedure should be conducted as confidentially as possible, in order to protect those involved in the investigation. Such confidentiality should be maintained provided this does not compromise the investigation of the allegation, health and safety, or the safety of participants in research.

• Where possible any disclosure to third parties should be made on a confidential basis.

• If the organisation and/or its staff have legal obligations to inform third parties of research misconduct allegations, those obligations must be fulfilled at the appropriate time through the correct mechanisms.

No detriment

• Anyone accused of research misconduct is presumed innocent.

• No person should suffer any unnecessary penalty when accused of research misconduct before the allegation is proven.

• No person should suffer any penalty for making an allegation of research misconduct in good faith, but action should be taken against persons found to have made allegations in bad faith.

Annex II：

Boilerplate text for International Agreements, as suggested by the OECD Global Science Forum Coordinating Committee for facilitating international misconduct investigations

We, the parties, agree：

• to conduct our research according to the standards of research integrity, as defined in the “Guidance Notes for Developing Procedures to Investigate Research Misconduct Allegations in International Collaborative Research

Project”（www.oecd.org/sti/gsf）and other appropriate documents, including：（specify the national codes of conduct and disciplinary or national ethical guidelines that apply）；

• that any suspected deviation from these standards, in particular alleged research misconduct, will be brought to the immediate attention of（all designated contact point（s））and investigated according to the policies and procedures of（to be filled in with the body with primary responsibility）, while respecting the laws and sovereignty of the States of all participating parties；

• to cooperate in and support any such investigations；and

• to accept（subject to any appeal process）the conclusions of any such investigation and to take appropriate actions.

4. Implementing Research Integrity：Elements of a framework for research integrity governance

4.1 Scope of a Research Integrity Governance Framework

Many European countries currently either have no, or poorly developed, national guidelines or structures to promote research integrity and respond to misconduct.

In addition, a number of countries are currently modifying or reviewing existing structures. As part of the ESF Member Organisation Forum on Research Integrity（MO Forum）, Working Group 3（WG3）undertook to：Identify a framework and develop guidelines for establishing national and/or institutional structures to implement good research practice guidelines and to deal with allegations of research misconduct.

The Forum members agreed on the tenet that both scientific and scholarly research should be governed by the principles of research integrity, and that early preventive and inductive measures to ensure an awareness among scientists and scholars of good research practice（and hence of research integrity）should be advocated as part of curricula.

The extent of misconduct that is within the scope of any governance framework seeking to enforce research integrity should encompass the core issues

of research misconduct as identified under the European Code of Conduct on Research Integrity, namely the so-called FFP （ Fabrication, Falsification, Plagiarism ）, but also other forms of serious scientific misconduct. Chapter 3 discusses such improper dealings in more detail.

In order to promote the establishment of mutually compatible institutional structures for dealing with research integrity, we present below core elements, model structures and proposals for moving towards building such structures.

The Working Group comprised members from different kinds of science organisations and aimed to propose a framework applicable to diverse institutional and legal contexts. It goes without saying that all proposals and

recommendations below are to be validated against and will have to be subject to existing applicable legal and other statutory rules.

4.2 Core Elements of a Framework for Research Integrity Governance

International codes of conduct and guidelines, such as those developed by the ESF and ALLEA, the OECD's Global Science Forum and the recent Singapore statement set out strong fundamental principles of research integrity that are widely recognised and must become foundations for any framework aimed at ensuring research integrity（RI）.

Consequently, an ideal research integrity governance structure should：

• Protect the core principle of 'mutual trust', necessary for knowledge sharing and research collaboration；

• Provide common standards for all actors in the scientific endeavour；

• Protect individuals and institutions；

• Strengthen public confidence in the research process and its outputs.

The position in society at which we consider RI to be most relevant will influence how the governance framework for managing expectations and failures to meet these expectations is set up. Should RI be seen as an internal part of the governance of science, or as reflecting and responding to concerns in society at large? Should it be addressed through self-binding moral commitment or through

legislation?

Research, by its very nature, is founded on honesty and competition, on data that is real, yet selective, and on an open critique of conceptual and methodological frameworks among peers but increasingly also other societal actors. RI has long been considered to be a part of science governance as opposed to requiring statutory legislation, since codes of conduct and recommendations for good research practice（GRP）are dependent on understanding and upholding core research values, as laid out in greater detail in Chapter 3. On the other hand, there are situations where serious deviations from GRP constitute a statutory offence, and where the case at hand is subject to the laws of the land.

The challenge in developing a framework for research integrity governance is that it must be both compatible with diverse legal national contexts, translating globally accepted principles into national policy and practice, and correspond to the fundamental ethical guidelines that scientists and scholars set for themselves. In what follows, the focus will be on the challenges presented by the task of reconciling fundamental（and global）principles with nationally applicable legal and institutional contexts. The guiding thought is to enable flexibility and compatibility of structures in different settings without making compromises with regard to the principles to be upheld.

The starting point will be different in each European country； furthermore, promoting the integrity of science systems may face many fundamentally different challenges in developing countries, and in countries in transition or

emerging economies. Yet, given the increasingly close research collaboration between all these different classes of science systems, there is scope and need to enhance all existing systems：the first step implies identifying and adopting the core elements already present（and expressed in the European Code of Conduct）, and which nations and institutions should set as benchmarks for aspirations to improve their current research integrity governance structures.

A governance framework aimed at ensuring oversight of research integrity must include a number of core elements identified by the Working Group, regardless of the level at which it operates, to ensure that it will work. These include：

（i）Agreement of core definitions

There is a need at the outset to reach an agreement on what lies within the scope of the concept of ‘research integrity’ and ‘scientific misconduct’. Such an agreement will be essential in the development and implementation of harmonised and compatible research integrity governance structures across Europe and beyond. However, the challenge of achieving such an agreement cannot be underestimated. The European Code of Conduct presented in Chapter 3 and the result of the work of ALLEA and WG2 proposes definitions that it is hoped can be adopted across Europe and beyond. It was presented to universal acclaim at the second World Conference on Research Integrity in Singapore in July 2010.

Definitions of good research practices need to take into account the heterogeneous nature of Europe and the many scientific disciplines that need to be reflected. This means that national and field-specific interpretations of what constitutes bad practice, and how serious that bad practice is deemed to be, may vary from country to country, organisation to organisation and even from discipline to discipline. Broadly speaking, the European Code of Conduct （Chapter 3） addresses the need to consider national and organisational cultural and philosophical norms and habits, public perceptions of and concerns about science and scholarship in a given country or regarding a given field and national stakeholder needs.

（ii）National mandate

The experience of countries in which a national oversight or governance structure has been developed suggests that there is a need for a clear and authoritative national statement to underpin research integrity governance structures. This can take the form of a charter or of legislative support. In devising such a mandate countries can draw on the experiences of others which have already addressed this element, such as Denmark and Norway. In countries in which no national debates have been held yet, the awareness raising processes referred to in the work of WG1 might aim at building alliances between the scientific communities and the main authorities governing the national science system.

（iii）Fair and transparent processes

Processes advertised to denounce and to deal with suspected cases of scientific misconduct at both local and national level must be fair and transparent. Otherwise there is a risk that stakeholders will refrain from accepting the authority of and cooperation with the relevant institutional actors. It is critical to strive for a balance between prevention and sanction. More emphasis needs to be placed on prevention, so that whatever processes are adopted will be perceived as supportive of a system to ensure good research practice and not as isolated punitive action.

（iv）Responsibility for managing processes

Roles and responsibilities for prevention, investigation and imposition of sanctions need to be clearly assigned at both local and/or national level.

In addition, there are a number of core requirements that should apply at an operational level. These can be divided into two stages：

A. Ex ante： Embedding principles of GRP and research integrity into the culture of science and scholarship：

（ v ） Mechanisms for embedding GRP into the culture of science and scholarship

Nobody would dispute that all researchers are entitled to work in an environment that promotes GRP. Many stakeholders have a role to play in creating such an environment, including universities, research institutes, funding agencies, journals, professional organisations, research integrity offices and so on.

Prevention, education and awareness raising should reach all stages of an academic and researcher’s career – undergraduate, postgraduate and temporary or permanent employee responsible for research. At a time when research practices and scientific fields change constantly and rapidly it would be wrong to assume that the necessity to update one’s knowledge on the challenges to and requirements for GRP ceases when an individual reaches the level of research team leader or tenured professor.

In order to truly imbed GRP into the culture of scholarship, training in GRP from the start of a career in science and scholarship will be necessary； at the institutions that prepare future researchers for their jobs, such training should be

an integral part of their research integrity governance framework. National frameworks should refer to that responsibility, and funders should require from recipients of their funds that such measures as are required are in place.

We noticed that in many cases there is already a strong emphasis on plagiarism detection and prevention in coursework assessment at undergraduate level. However, at postgraduate level and beyond, we found as yet relatively few opportunities for formal GRP training. The recent move towards a 'structured doctorate' model in many countries provides an excellent opportunity to lay the foundations for GRP at what must be seen as the entry point into a research career. Research integrity should also be integral to research supervision and mentoring, requiring more senior researchers to become fully aware and supportive of the principles and practice of GRP. A particularly delicate moment in ensuring GRP and respect for research integrity rules emerges at the constitution of cross-disciplinary, cross-institutional and cross-national research groups, expected to collaborate closely. The lead institution will be expected to bear the responsibility of ensuring shared standards with regard to RI.

（vi）Robust procedures for data management

The ability to repeat experiments and thereby verify（or falsify）claims made in the scientific literature are a key tenet of scientific practice. However, even where data storage practices at the laboratory level are adequate, turnover of postgraduate, post-doctoral and increasingly also senior researchers can make tracking of data difficult. Therefore, institutions should be encouraged to invest in centralised and secure storage for experimental data, making it easy to validate experimental findings if required. Training at all levels should include good practices in relation to data collection and storage.

（vii）Identify where guidance can be sourced by researchers and other stakeholders

It would be unrealistic to expect individual institutions to develop guidelines and their own training materials； assistance should be provided by national oversight bodies and/or international organisations in this regard. Tools for information sharing could include the establishment of a web site or other public fora to capture good quality documentation on GRP and related training units.

This could also include presentation of misconduct scenarios as an educational tool for researchers and trainers. Elsewhere, this text refers to the emerging European network of research integrity officers as a possible point of reference for practitioners and to their planned web site as a resource for case studies.

（viii）Procedures for pooling case information

Regardless of the approach adopted in particular countries or institutions, sharing experience is extremely important. It can help to provide easy access to best practice locally, nationally and internationally. Protecting research integrity, without stifling research creativity, is a constant learning process； the pooling of knowledge and experiences will build up a body of data on the extent of research misconduct and measures to deal with and prevent the phenomenon, locally, nationally, across Europe and beyond.

Networks such as ENRIO（European Network of Research Integrity Offices）offer an invaluable international forum for practitioners to share their experiences and to identify and debate issues around research integrity governance.

While there is a need to deal with privacy issues in the appropriate fashion, there is little doubt that publishing both positive and negative outcomes of investigations will help to raise awareness among the broader research community. Therefore, there should be agreement on sharing of knowledge between the consultative bodies at local and national levels, and between the national and the international level.

B. Ex post： Dealing with allegations of research malpractice or poor research conduct：

（ix）Consistency with national laws

In terms of legislation to support research integrity governance structures nationally, care has to be taken not to create an overly legalistic framework which could threaten to stifle creativity and the pursuit of knowledge. Most countries already have provisions and statutes as part of their legal system that also cover elements of the handling of allegations of scientific misconduct. These must be upheld and respected and brought to the knowledge of all actors in science； in promoting and implementing locally and nationally such elements should be identified as predating and overriding any internal RI guidelines.

（x）Ensure that procedures for investigation are legally robust

Quite apart from the damage that research misconduct inflicts on the scientific record and, potentially, on society, it can directly harm individuals when they are subjected to practices derived from and building on tainted datasets； the reputation of host institutions of such research and of entire disciplines is at risk. Another delicate matter is threats to the careers of whistleblowers who may be subjected to undue sanctions, or damage to the reputation of individuals who have fallen victim to vexatious and untrue allegations. Therefore, any framework for the implementation of research integrity governance structures has to enshrine within it the rights of the individual to fair and equitable treatment and should make reference to the applicable legal standards concerning protection of the individual.

It is furthermore recommended that awareness raising measures deal pro-actively with the potential threats to the dignity and career prospects of individuals, including among the requests that minimum legal standards for the

protection of individuals involved in such cases are guaranteed, wherever such measures should not be in place.

（xi）Clarify procedures for receiving concerns or allegations

There needs to be clearly understood procedures for making and receiving allegations. This includes agreement about who can bring forward an allegation and how they can do this（anonymous, named）, in what form a concern should be raised（verbal, written）and to whom allegations/concerns should be addressed.

Different procedures may apply in different countries and institutions； it is important that in cases of cross-national and cross-institutional research collaborations these differences are made explicit to all parties concerned.

（xii）Agreement on transparency of misconduct investigations

Any research integrity governance framework should seek to achieve a proper balance between transparency and confidentiality； this means an appropriate protection of the reputation of the individual against whom allegations have been made. Guidelines should comprise clear statements about the desirability or obligation to reveal outcomes to third parties（press, national oversight bodies, funders）and about the circumstances under which a specific

course of action can or must occur.

（xiii）Decide on levels of appeal

As in all legal and quasi-legal proceedings, there should be an instance of appeal. The permissibility of appeals, the types of appeals, for example concerning either the scientific or the procedural elements of an investigation, and the processes for appeal should be clearly stated in any procedures.

（xiv）Decide on sanctions and responsibility for enforcement

There needs to be a statement on the types of sanctions that can be imposed, ensuring that they are appropriate to the level of digression from codes of GRP. Ideally, an agreement should be reached among the institutions（and countries）that deliberately examine their measures for compatibility of proposed sanctions；this becomes more important in cases of cross-national and cross-institutional research collaborations. There also needs to be agreement not only on types of sanctions, but on who can recommend them and who has responsibility for enforcing them.

（xv）Protection of whistleblowers

The issue of whistleblowers is a particularly important one to address when developing research integrity governance structures. It has been observed that research students, post-doctoral researchers and junior staff are the most likely to observe misdemeanours. However, these staff are in the most vulnerable positions and a complaint, even when justified, may risk ending their research career. They may also be reluctant to complain to senior staff within their institution, out of loyalty or because they may not feel their allegations and observations will be given a neutral and impartial reception.

Therefore, it is critical that whistleblowers are afforded protection, in law if necessary, since the success of research integrity governance is utterly and crucially dependent on the willingness of individuals to step forward even though they are part of the same higher education and research structures.

4.3 Models of Research Integrity Governance

We have observed a number of broad approaches to research integrity governance and/or oversight currently being taken in Europe and elsewhere. They

are summarised in a rough typology in Table 1.

Table 1：Approaches to research integrity governance in operation in Europe at present

Approach to research integrity governance	Type of structure/supporting guidelines and policies	Responsibility for implementation
Self-regulation/Peer Review	No guidelines on handling of allegations of misconduct, emphasis on general（scientific）ethics	Reliance on peer review, peer pressure and scientific ethics of the group and the individua
HE & research institutions（without higher level oversight）	Guidelines adopted locally for GRP and for the handling of allegations of misconduct	Either ad hoc or standing committee under the institutional leadership
Funding agencies/Academies, Learned and Professional Societies	Policy /guidelines for GRP and handling of allegations of misconduct discussed/ proposed/enforced for beneficiaries and members	The agencies themselves as part of their remit for interaction with members of the scientific community（funding and membership rules）
HE & research institutions（with higher, typically national oversight）	Policy /guidelines agreed nationally for handling of allegations of misconduct; typically implemented locally； GRP measures mainly agreed upon and implemented locally	National Body oversight but local implementation
National governance	National legislation/charter approach to GRP and handling of allegations of misconduct	National（RI）Office or Standing Committees

Of course, the situation in most settings is more complex than Table 1 implies； typically, more than one approach is adopted across institutions and national bodies at the same time, as the same actors perform in different functions.

The differing size of countries will also have implications for the approaches adopted. It may be easier or more accepted to have a 'national system' of research integrity governance in smaller countries, whereas in bigger countries with very large and powerful institutions and universities it may be more difficult to reach consensus about appropriate approaches to research integrity governance. Yet, the typology does serve to illustrate the existing heterogeneity of approaches in both academic and government systems across the continent and beyond, and the need for measures to ensure compatibility.

In persuading local and national stakeholders to establish research integrity governance structures or improve on their existing ones, both the advantages and risks of the current systems in operation need to be considered. The challenge for each institution, agency, society or country is to balance and integrate individual responsibility and local structures, national research integrity coordination or governance, and universal principles. The challenges are particularly acute where there are no research integrity governance structures in place yet, or where governance happens at a strictly institutional or local level with no national coordination. The presence of structures for certain areas（typically biomedical research）as opposed to their absence in other scientific fields is another issue to be contended with. Conversely, it can be observed that as a coordinated and nationally agreed system emerges the robustness of the governance structure increases.

Self-regulation, governance at individual institutional level and peer review

Primary responsibility for offering measures to prevent instances of scientific misconduct should lie with the institutions that are the direct employers or educators of research staff and students. In many countries, local

institutions have responsibility for investigating allegations of misconduct where they arise. Such self-regulation endorses local responsibility and leadership, enhances visibility of integrity issues at an institutional level and ensures that local knowledge of the circumstances of suspected misconduct can inform appropriate action.

Despite its many advantages, this approach carries a number of inherent

risks, Potential reputational damage to an institution, especially where an allegation involves a ‘star’ researcher or a research area in which the institution prides itself on excellence, could increase the temptation to hide cases or deal with issues behind closed doors. Thus, where no standard procedures are in place and ad hoc arrangements need to be resorted to, self-regulation could be perceived to militate against impartiality, thereby increasing the risk of public scepticism against research if cases are not adequately handled. The absence of agreed guidelines and procedures will also result in inconsistent outcomes in different institutions.

However, next to the argument of equitable treatment, there is also one of efficiency： for the absence of agreed processes and procedures for research integrity governance could result in loss of time when a case occurs, since investigations will essentially be starting from scratch. In addition, individual institutions are unlikely to build breadth and depth of experience in investigating misconduct and there is a lost opportunity for common learning or accumulation and sharing of experience. Furthermore, lack of agreed procedures and clearly stated support may make it difficult to whistle-blow, or discourage people from coming forward with concerns.

Similarly the process of peer review of manuscripts can serve to highlight issues about the integrity of the data or the approaches being presented, but participants in peer review colleges, acting as individuals and being pressed for

time, may not always have complete access to the necessary information（even, or especially, when large data sets are supplied as part of the publication, as is increasingly occurring in a number of disciplines）.

All these arguments are strong pointers towards the desirability that self-regulation is augmented by higherlevel coordinating and harmonising support structures for dealing with infringements of the principles of research integrity.

Research integrity oversight driven by national bodies

The risks inherent in research integrity governance at an institutional level may be countered by oversight structures that act to harmonise and coordinate processes, procedures and guidelines across institutions and provide consistent advice, guidance and support. Such regional or national oversight structures can

also facilitate a higher appeals mechanism and reduce the likelihood of cases being hidden out of misperceived institutional self-interest.

Provision of oversight and guidance by research funding agencies, Academies and learned societies, as well as professional and subject associations is likely to be accepted by many in the research community as providing independence and credibility in procedures and guidelines. The difficulty with provision of oversight by research funding agencies is that in many countries institutions may question the legitimacy of national coordination by such an agency and resist compliance. Furthermore, many such agencies will not have the resources necessary to monitor compliance while the entire system will be crucially dependent on buy-in by institutions, and their willingness and commitment to exchange information.

In addition, any such example of sectoral oversight is unlikely to provide coverage of both public and commercial activity, a fundamental requirement that should be borne in mind when considering research integrity governance arrangements. Oversight managed by professional associations and learned societies may experience similar difficulties, although in the Netherlands LOWI – with its secretariat at the Royal Netherlands Academy of Arts and Sciences – has almost universal coverage of the public sector for research integrity governance in the country, and brings together the research council, the universities,and research institutes of the Academy and those funded by others.

Regardless of who provides regional or national oversight, it must be stressed that responsibility for implementation will still reside locally with the attendant challenges and risks described above. By the same token, and most importantly, regardless of who provides regional or national oversight, responsibility for establishing a culture of GRP and for implementing the rules of research integrity will reside with the scientific communities and institutions locally, with the attendant challenges and risks described in the previous section. These are two important basic tenets to be borne in mind for awareness raising activities.

National research integrity governance structures

Properly constituted national research integrity governance structures can

resolve many of the critical issues identified for models of pure self-regulation or sectoral oversight/regulation by research funding agencies, professional associations or learned societies. National support offices can provide consistent advice, support and guidelines across both the public and private research sectors. They may also be seen as being invested with the independence necessary for investigative processes and equality in access and treatment of cases, making conflicts of interest less likely to occur. Importantly, national standing committees can reach professional competence, and the authority for GRP and investigations is clear to everyone.

Research integrity governance based in national offices can also facilitate international cooperation and mutual cross-border and cross-institutional learning processes. The emerging framework should make the best use of opportunities to establish links with other national research integrity offices. Currently ENRIO offers such a platform.

The disadvantages of the development of national research integrity governance structures pertain primarily to institution perceptions and behaviours. Institutions may become defensive about perceived loss of autonomy and interference by national offices, especially if the resourcing and location of the national office is perceived to be politically influenced. There is also a risk that institutions may not have the resources to provide training and education at the standard set nationally or that they could try to abdicate their responsibility for GRP to the national office, However, a well constituted, impartial and professional national office should allay many of these fears over time especially if the office is seen to be respectful of institutional responsibility and autonomy.

4.4 Selected National Research Integrity Governance Structures

There is still some global, national and institutional diversity in the definition of scientific misconduct and in the scope of preventive measures and practices applied to ensure the integrity of a country’s national research system.

Preventive measures include comprehensive mandatory research integrity education at the undergraduate and postgraduate level（e.g., Denmark）as well as specific plagiarism education for undergraduates （e.g., UK）. Investigation

procedures and structures also vary widely. Typically, the primary responsibility for teaching, promoting and ensuring integrity and good research practice as well as for investigating and handling issues of research misconduct rests with the institution that hosted the research and/or is the employer of the researcher in question17. For example, in the USA, the research institution is usually responsible for the conduct of investigations with guidance and oversight from national bodies, while elsewhere, for example in Norway, a national office or commission is responsible for investigating allegations of misconduct.

Established national guidelines to promote research integrity and formal structures to investigate allegations of misconduct are relatively rare, with the USA, Denmark, Norway, Finland, Australia, Canada and Germany among the small number of countries with established national research integrity procedures/guidelines and national offices to oversee their application. These offices vary in size and remit with the most formal and developed structures found in the USA and Scandinavia.

In the USA, the National Science Foundation（NSF）Office of Inspector General（OIG）and the National Institutes of Health（NIH）Office of Research Integrity（ORI）facilitate research integrity of health and biomedical research funded by the NSF and the NIH. The OIG and ORI provide policy guidance and technical assistance to research institutions and perform a review and oversight function of the cases institutions refer to it. Responsibility for the preliminary investigation of allegations of misconduct rests with the host institution in which the research is conducted, but institutions must report all allegations and investigations to the national oversight office. Institutions conducting federally funded research must also meet a list of compliance requirements including maintaining written policies and procedures for addressing research misconduct allegations. Institutions are also required to foster a research environment that promotes responsible research and training, and discourages misconduct. In the case of NSF funding, recipient institutions must now demonstrate that they have GRP training measures in place. This policy change will have implications for collaborative ventures part-funded by the NSF outside the USA, where such procedures and training mechanisms may not be place.

A greater diversity of approaches is followed across Europe, with the Scandinavian countries among the first to develop national research integrity structures.

• The Danish Committee on Scientific Dishonesty, an eight member committee including a high court judge, was established in 1992. The Committee retains the anonymity of those on whom it has made findings and those subjected to investigation can appeal decisions to the Danish Agency for Science, Technology and Innovation.

• Norway established the National Commission for the Investigation of Scientific Misconduct in 2007 following a serious case of scientific misconduct. The commission covers all research fields and deals with research carried out by Norwegian research institutions, private or public. Primary responsibility for preventing and handling allegations of research misconduct remains with the research institutions, but they may redirect an investigation to the Commission if, for example, a case is deemed particularly complicated, has received considerable public attention or involves possible conflicts of interest. In such instances, the Commission will assess the allegations, decide whether they need further investigation and issue a statement on whether research misconduct has occurred. Responsibility for sanctions rests with the research institution. Appeals can be addressed to the Norwegian Ministry of Research, which appoints an ad hoc commission to handle the appeal. The Commission can also initiate investigations on its own initiative and investigate cases abroad if researchers employed by a Norwegian institution have conducted the research or if significant funding originated in Norway.

The UK Research Integrity Office（UKRIO）23 is an independent advisory body, hosted by Universities UK, and supported by the major regulators and funders of health and biomedical research. While it is not a regulatory body and has no formal legal powers, it provides independent support, non-mandatory advice and guidance to employers, research organisations, researchers and the public to promote good practice in maintaining research integrity. It has published a comprehensive Code of Practice for Research and Procedures for Investigation of Misconduct, as well as providing education and training to its subscribers and a

dissemination programme on research integrity issues.

For a more comprehensive description of the approaches adopted in individual European countries, the reader is referred to the 2008 ESF report Stewards of Integrity：Institutional Approaches to Promote and Safeguard Good

Research Practice in Europe24. It should be emphasised, however, that the survey is in need of constant updates, as many countries are constantly improving their structures. It is envisaged that ENRIO, which will represent the RI practitioners in Europe, will be able to provide a constantly updated web site with the latest changes incorporated in close succession.

4.5 Conclusion

Good research is ultimately based on trust – trust between research colleagues and between academic institutions and industry, and the trust of the public and policy makers in the research community. Without such trust, the research system would quickly flounder. Trust in science and scholarship needs to be a priority for all nations and institutions. The research community needs to be able to apply good research practice and has to be prepared to deal with situations when there are suspicions of misconduct. Waiting for a serious case of misconduct to prompt such action is short-sighted and risks undermining the standing of science in society.

Protecting research integrity, without stifling research creativity, is a constant learning process. The deliberations of the ESF MO Forum also suggest that there is no ‘one size fits all’ framework of research integrity governance that can be readily applied across all European countries. Science organisations and research institutions in each country should discuss and develop their own research integrity governance structures, suited to the country’s size, resources and research infrastructures.

Regardless of the approach adopted in particular countries or institutions, sharing experience is extremely important. It can help to provide easy access to best practice locally, nationally and internationally； the pooling of knowledge and experiences will build up a body of data on the extent of research misconduct and measures to deal with and prevent the phenomenon, locally, nationally, across

Europe and beyond. Especially in Europe reliable data is lacking. Networks such as ENRIO offer an invaluable international forum for practitioners to share their experiences and to identify and debate issues around research integrity governance.

Other tools for information sharing include the establishment of a web site or other public forum to capture good quality documentation on GRP and guidelines, etc. This could also include presentation of misconduct scenarios as an educational tool for researchers.

In summary, there is a balance to be struck between promotion of GRP and prevention of misconduct on the one hand, and investigation and punishment of misconduct on the other. Examination of the frameworks currently in place in Europe underlines the desirability of developing national systems to support local implementation and to provide training and guidance on all elements of GRP. There is no single framework that will have pan-European application but this section has attempted to identify the core elements that should be present in a workable research integrity governance structure.

5. Conclusions and Recommendations

Following the fourth and final meeting of the MO Forum in Rome in November 2010, it was agreed that：

• The ESF Governing Council had already received and approved the Executive Report. The next step is to ask for the formal endorsement by the ESF Governing Council of the MO Forum recommendations and that all MOs adopt the European Code of Conduct and the Report ’ s recommendations. EUROHORCs should also be asked to formally adopt the Code. The ESF Governing Council should also be invited to accept the implementation plan.

• MOs should be asked to incorporate the European Code and the OECD/GSF text into international agreements.

• There is a need for the adoption of the European Code and the establishment of a clear Research Integrity policy at the European level for FP8 and the ERC. ESF, with key partners （ e.g., ALLEA ） , recommends this

incorporation in key texts at different European levels （ EU Presidencies, Commissioner and her Cabinet, DG Research, European Parliament（ITRE）, the ERC and ERAB ） . Similarly, other European organisations should be urged to adopt the Code.

• All of the above bodies should be asked to endorse, and confirm that they have endorsed, the European Code and Implementation Proposals in their own activities. In particular, they should：

a. implement the European Code of Conduct；

b. implement the Framework for Research Integrity Governance；

c. implement the Monitoring Proposals from the Forum； and

d. ensure that an appropriate Research Integrity clause is inserted in all international agreements.

• The ESF Governing Council is asked to request that all MOs report back by January 2012 on what they have done to implement the Research Integrity recommendations. A further meeting of the ESF MO Forum will be convened early in 2012 to analyse the responses, and to decide what further action, if any, may then be needed. This may include taking into consideration whether there is a case for periodical updates of Stewards of Integrity.

• Specialist topic workshops should be developed in partnership with ALLEA, ENRIO, COPE, EUA, LERU and other appropriate organisations.