12 Ethical Challenges in Collaborative and Interdisciplinary Research: Issues, Conflicts, and Frameworks for Accountability

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Abstract

Interdisciplinary and collaborative research has become essential for addressing complex issues that extend beyond the scope of any single discipline, including climate change, global health, artificial intelligence, and social inequality. Combining diverse theoretical perspectives, research methods, and institutional expertise increases the potential for innovation and enhances the relevance of research outcomes. At the same time, these collaborations raise important ethical concerns that are often difficult to manage within conventional discipline-based frameworks. This chapter examines the principal ethical challenges associated with interdisciplinary and collaborative research. It focuses on issues such as authorship disputes, unequal recognition of contributions, data ownership and sharing, informed consent, methodological disagreements, and accountability in large and diverse research teams. The discussion highlights how differences in disciplinary practices, institutional policies, and cultural values can create ethical tensions and increase the risk of oversight. The chapter also evaluates the limitations of existing ethical guidelines and emphasizes the need for common standards that can be applied across disciplines and international contexts. Practical strategies for promoting ethical research are presented, including early authorship agreements, transparent communication, interdisciplinary ethics training, effective governance structures, and stronger institutional support. The chapter concludes that maintaining research integrity in collaborative settings requires shared responsibility, clear accountability, and ethical frameworks that are flexible enough to address the complexity of contemporary research.

Keywords: Collaborative Research, Interdisciplinary Research, Research Ethics, Research Integrity, Accountability.

Introduction

In recent decades, research practices have undergone a major transformation, marked by the rapid growth of interdisciplinary and collaborative approaches. The traditional model of working within a single discipline is no longer dominant. Instead, researchers from different fields and often from different institutions and countries are increasingly working together to address complex problems. This shift reflects a broader understanding that many global challenges, such as climate change, public health crises, artificial intelligence governance, and technological ethics, cannot be effectively addressed within the boundaries of a single discipline (Newman, 2023).

As a result, interdisciplinary research has emerged as a key driver of innovation and knowledge integration. The convergence of varied methodological approaches and disciplinary expertise enables researchers to develop richer, more nuanced solutions to problems that single-field inquiry cannot adequately address. Empirical evidence supports this trend. Large-scale studies show a steady increase in collaborative and cross-disciplinary publications, indicating the expansion of global research networks and team-based science (Wuchty et al., 2007; Fortunato et al., 2018). Similarly, recent research highlights that interdisciplinary collaboration not only enhances the quality of research but also contributes significantly to scientific impact and societal relevance (Park et al., 2023). Overall, this shift toward collaboration and interdisciplinarity reflects the changing nature of knowledge production in the modern era. While it offers significant benefits, it also introduces new challenges, particularly in relation to ethics, coordination, and accountability, which require careful attention.

The growth of this collaborative model has been substantial and measurable. Bibliometric analyses of global research output confirm that multi-author and multi-institution publications have grown dramatically over the past four decades, and that the degree of interdisciplinary mixing has intensified across nearly all major fields of knowledge (Rong et al., 2024). Funding agencies in many countries now explicitly reward interdisciplinary proposals, and major universities have established dedicated interdisciplinary research centres as a sign of institutional commitment to this approach (Newman, 2024).

However, this growth has not come without complications. As research teams grow larger and more diverse, the ethical questions surrounding that research also grow more complex. Questions that seem simple on the surface: Who is responsible for the accuracy of the data? Who deserves authorship credit? Whose ethical norms should govern the work when team members come from different disciplines and different countries? can become deeply contested in interdisciplinary contexts. Traditional ethical frameworks were largely designed with single-discipline, single-institution research in mind. Applying them to large, diverse, international

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collaborations often produces confusion, conflict, and oversight gaps (Cengiz & Kabanda, 2024).

Authorship is one of the most visible and frequently disputed ethical issues in collaborative research. As the number of contributors to a single study grows, determining who has made a sufficient intellectual contribution to merit authorship versus who should receive only an acknowledgment becomes increasingly difficult. The International Committee of Medical Journal Editors (ICMJE, 2024) provides widely used criteria for authorship in the biomedical sciences, but these criteria are not universally applied across disciplines, and their implementation in large multi-institutional projects often generates conflict. A cross-disciplinary survey published in Scientometrics confirmed that authorship disputes are common across academic fields and are particularly prevalent in contexts involving large, multi-site collaborations (Lazebnik & Gorlitsky, 2024).

Cultural and disciplinary differences create another layer of ethical complexity. Researchers bring with them not only different technical vocabularies but also different assumptions about what constitutes ethical conduct, what methods are appropriate, how data should be collected and shared, and who has decision-making authority within a team. A study examining collaboration between researchers from science-based and arts-based disciplines found a significant and asymmetrical cultural divide, with science-based researchers expressing reluctance to collaborate across disciplinary lines, a finding that has implications not only for research productivity but for the ethical functioning of interdisciplinary teams (Newman, 2025).

Data ownership and sharing present yet another ethical challenge. When research data are produced through collaboration, it is often unclear who owns those data, who controls their use, who may share them with outside parties, and what happens to them when the collaboration ends. In research settings involving sensitive human data, particularly in low- and middle-income contexts, these questions intersect with concerns about power, exploitation, and informed consent (Cengiz & Kabanda, 2024). Traditional research ethics frameworks, including institutional review board (IRB) processes, were not designed to handle the ambiguities of multi-institutional data ecosystems, and their limitations become apparent in the context of large-scale interdisciplinary projects.

All of these unresolved issues put researchers in a difficult position. On one hand, modern science encourages open collaboration and data sharing. On the other hand, there are rarely clear rules about who owns the data, who can access it, or who is responsible for protecting it. When these agreements are not made at the start of a project, teams are left to figure things out as they go, an approach that often leads to confusion, conflict, and harm to research participants.

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The purpose of this chapter is to examine key ethical challenges in interdisciplinary and collaborative research, focusing on their causes and practical implications. It begins by defining interdisciplinary research and its importance, followed by a discussion of how ethical standards vary across disciplines. The chapter then explores major issues such as authorship disputes, disciplinary tensions, team coordination, methodological conflicts, data governance, and informed consent. It also evaluates the limitations of existing ethical frameworks and highlights the need for more unified standards. Finally, the chapter outlines practical strategies, including clear authorship guidelines, effective communication, ethics training, and institutional support and concludes with reflections on future directions in research ethics.

- **Understanding Interdisciplinary and Collaborative Research**

Interdisciplinary research is defined by the United States National Academies as research that integrates information, data, techniques, tools, perspectives, concepts, or theories from two or more disciplines or bodies of specialized knowledge (National Academies of Sciences, Engineering, and Medicine, 2005, as cited in Newman, 2023). This definition distinguishes interdisciplinary research from multidisciplinary research, in which different disciplines contribute to a shared problem but work largely in parallel without significant integration, and from transdisciplinary research, in which disciplinary boundaries are so thoroughly dissolved that fundamentally new ways of knowing emerge. Interdisciplinary research, properly understood, involves active integration the borrowing, blending, and sometimes transforming of concepts and methods across disciplinary lines.

Collaborative research, which often overlaps with interdisciplinary research, refers to projects involving two or more researchers, institutions, or organizations working jointly toward shared goals. Collaboration may occur within a single discipline or across multiple disciplines. The defining characteristic is shared effort and shared responsibility for the research process and its outputs. In practice, most major interdisciplinary research projects are also collaborative in structure, involving teams drawn from different departments, institutions, and sometimes countries.

- **Importance in Addressing Complex Global Problems**

The rationale for interdisciplinary research rests on the premise that the most significant challenges facing contemporary societies are inherently multidimensional and cannot be addressed through any single lens. Climate science, for example, requires the integration of physical and biological sciences, economics, political science, public health, and ethics. Pandemic preparedness requires epidemiology, virology, behavioural science, logistics, law, and community engagement. Artificial intelligence governance requires computer science, philosophy, legal theory, social science, and political economy. None of these challenges can be adequately

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understood, let alone addressed, by researchers working exclusively within their own disciplinary traditions.

Interdisciplinary research has also been linked to higher levels of creativity and innovation. When researchers are exposed to ideas, methods, and questions from outside their own fields, they are more likely to develop novel approaches and unexpected insights. There is increasing institutional recognition of this dynamic, reflected in the proliferation of interdisciplinary research centres, cross-disciplinary funding programs, and policies that explicitly reward collaboration (Newman, 2024). Despite material obstacles, including the extra time required, the difficulty of securing interdisciplinary funding, and the challenges of publishing in traditional single-discipline journals, the normative and practical case for interdisciplinary research remains strong.

- **Shift From Single-Discipline to Multi-Disciplinary Approaches**

The shift from single-discipline to collaborative, interdisciplinary research has been one of the defining trends of late twentieth and early twenty-first-century science. It reflects both internal pressures within science, the growing complexity of research questions, and external pressures from funders, governments, and the public, who increasingly expect research to deliver solutions to real-world problems rather than simply advancing theoretical knowledge. This shift has been documented bibliometrically: the proportion of single-author papers has declined across virtually all fields, while the proportion of papers with large, international author teams has grown substantially (Rong et al., 2024).

How Ethical Standards Differ Across Disciplines

One of the most important aspects of interdisciplinary research is that different fields operate according to different ethical standards. These differences are not superficial; they reflect deep variation in how knowledge is produced, how participants are treated, and what responsibilities researchers hold toward their communities and collaborators.

In biomedical research, ethical conduct is governed by established frameworks such as the Belmont Report, the Common Rule, and the ICMJE recommendations, all of which emphasise formal informed consent, rigorous data protection, and clear authorship criteria (Yadav et al., 2024). The social sciences rely more on professional codes from bodies like the American Psychological Association, with greater emphasis on participant autonomy and community engagement. In the humanities, single authorship remains the norm and informed consent is often less formalised (COPE, 2024). These differences matter because researchers entering a collaborative project bring different baseline assumptions about what ethical conduct requires. A biomedical researcher expecting IRB-approved consent procedures may

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work alongside a computer scientist who rarely considers consent at all, a gap that can produce real conflicts and genuine ethical oversights.

- **Need for Adapting Traditional Ethical Principles**

Core ethical principles such as those in the Belmont Report and the Declaration of Helsinki were designed for relatively simple, single-institution research structures. They were not built to govern large, multi-disciplinary, cross-national teams. While the underlying values respect for persons, beneficence, and justice remain universally relevant, their application in complex collaborative settings requires interpretation and adaptation. Shamoo and Resnik (2022) argue that ethical conduct should be understood not as a fixed rulebook but as a set of principles requiring contextual judgment, particularly when questions of consent, authorship, and data ownership arise across institutional and disciplinary boundaries.

Ethical Challenges in Collaborative Research

- **Authorship Disputes and Contribution Recognition**

Authorship is not merely acknowledgement, it is a formal claim to intellectual credit and professional advancement. As research teams grow larger, determining who has made a qualifying contribution becomes increasingly difficult. Nair and Giri (2024) note that authorship decisions in multi-author studies are often shaped by power dynamics and seniority rather than genuine intellectual contribution, giving rise to two common forms of misconduct: gift authorship, where credit is given to those who did not contribute sufficiently, and ghost authorship, where genuine contributors are omitted entirely.

The ICMJE (2024) provides four criteria for authorship: substantial intellectual contribution, drafting or critical revision, final approval, and accountability, but these are not consistently applied across disciplines. The CRediT taxonomy offers a partial solution by documenting 14 distinct contributor roles transparently, though its adoption remains uneven (COPE, 2024). Underlying all of this are power asymmetries: junior researchers, graduate students, and scholars from the Global South are disproportionately likely to have their contributions overlooked, reinforcing structural inequalities in knowledge production (Lazebnik & Gorlitsky, 2024).

- **Cultural and Disciplinary Differences in Ethics**

Ethical norms vary across disciplines and national contexts, and this variation becomes a serious problem when researchers from different backgrounds must work together without a shared framework. The most studied example is informed consent. The Western model treats consent as an individual decision, but in many African and Asian contexts, decision-making is communal and individual consent carries little meaning without family or community endorsement. Appiah et al. (2024) show how applying Western consent models in African settings can undermine community trust and violate local ethical expectations. Beyond consent, cross-cultural collaboration

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often involves what scholars call intellectual extractivism, the use of data and participants from low-income countries to produce findings published in journals controlled by high-income institutions, with little benefit returned to the source communities (Santos et al., 2024).

Disciplinary differences in method also carry ethical weight. Qualitative researchers prioritise participant relationships and context; quantitative researchers prioritise generalizability and statistical rigour. When these orientations collide, as in health services research or community-based studies, the resulting conflicts are not merely technical but ethical. Communication barriers compound the problem: disciplinary jargon prevents researchers from fully understanding each other's methods, creating conditions in which ethical problems go unrecognised (Newman, 2023).

- **Managing Large and Diverse Research Teams**

Large interdisciplinary teams face significant coordination challenges. When members are spread across institutions, time zones, and countries, maintaining consistent ethical standards is difficult. Decisions may be made by subgroups without consulting the wider team, and concerns raised by junior members may never reach project leadership. Responsibility for ethical oversight becomes distributed and often unclear. Each investigator assumes someone else has handled a particular obligation, and the result is that no one has. Zwart et al. (2025) argue that consortium-type research structures are especially prone to these accountability gaps, which existing ethical frameworks are not designed to address. When team members also hold different views about research design, data sharing, or participant recruitment, decision-making conflicts arise that require deliberate governance structures, not just goodwill, to resolve.

Methodological Conflicts in Interdisciplinary Research

Bringing multiple methods together is one of the strengths of interdisciplinary research, but it also creates ethical tensions. When qualitative and quantitative researchers disagree about methodology, the disagreement often reflects deeper differences in what they believe research is for and who it is accountable to. These differences cannot be resolved through technical compromise alone; they require explicit ethical deliberation about values and purpose. Similarly, when biomedical and social science traditions are combined, their ethical frameworks can conflict: biomedical ethics is procedure-focused, emphasising IRB oversight and risk-benefit analysis, whereas social science ethics is relationship-focused, emphasising trust and community responsiveness. Bringing these together without adequate preparation can mean that neither set of ethical requirements is fully met, and each tradition assumes the other has covered its responsibilities (Shamoo & Resnik, 2022).

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Key Ethical Problems in Interdisciplinary Collaboration

- **Lack of Standard Ethical Guidelines**

One of the most fundamental structural problems in interdisciplinary research ethics is the absence of unified, cross-disciplinary ethical guidelines. Most existing ethical frameworks, including IRB regulations, professional codes of ethics, and journal policies, were developed within and for specific disciplines. They reflect disciplinary assumptions and priorities and do not translate readily into interdisciplinary contexts. When researchers from multiple disciplines must agree on a common ethical approach, they frequently find that no single existing framework serves them well.

Ferretti et al. (2022) found that research ethics committee members in Switzerland were ill-equipped to evaluate the ethical dimensions of big data and interdisciplinary health research projects, lacking the conceptual vocabulary and procedural frameworks needed to do so effectively. Cengiz and Kabanda (2024) reached similar conclusions in their study of research ethics oversight in sub-Saharan Africa, finding that existing guidelines were not adequate for the challenges presented by digital, multi-institution, and cross-disciplinary data-sharing research. These findings point to a systemic failure of ethical infrastructure rather than merely individual failures of ethical judgment.

- **Data Ownership and Sharing Issues**

Data ownership in collaborative research is a genuinely contested ethical issue. When multiple institutions contribute to a shared dataset, each may have legitimate claims to that dataset, and those claims may conflict. Institutional data governance policies, funding agency data management requirements, national privacy laws, and the expectations of research participants may all pull in different directions. Resolving these tensions requires explicit negotiation at the outset of a collaboration, an exercise that many teams neglect in the rush to begin research.

The ethical stakes of data sharing decisions are particularly high in research involving human participants from vulnerable communities. When data collected from low-income or marginalised communities are shared with researchers in high-income countries for secondary analysis, questions of power, exploitation, and equitable benefit arise. Cengiz and Kabanda (2024) document how traditional ethics oversight mechanisms are often inadequate for managing these challenges in an African research context, where the intersection of ambiguous regulatory frameworks, power imbalances, and limited data science expertise creates conditions for ethical failure. They recommend the development of guidelines that are comprehensive, inclusive of ethical, legal, and social aspects, and sensitive to local context.

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- **Informed Consent Complexities**

Informed consent is a cornerstone of research ethics, but its application in interdisciplinary and collaborative research is frequently complex. When data are collected for one purpose and may subsequently be used for purposes not anticipated at the time of collection, as in many big data and secondary analysis projects, traditional informed consent models break down. Participants may have consented to their data being used in one way but not another; they may have been promised that their data would remain confidential in ways that are now incompatible with data sharing requirements; or they may simply not have been asked to consent to the full range of uses to which their data may eventually be put (Appiah et al., 2024).

Cultural variation in the meaning and practice of consent further complicates this picture, as discussed above. In many contexts, individual informed consent is neither culturally appropriate nor practically achievable in isolation from community-level consent processes. Developing consent frameworks adequate to interdisciplinary, cross-cultural research requires moving beyond a one-size-fits-all model and developing context-sensitive, pluralistic approaches that respect both the ethical principle of respect for persons and the cultural diversity of how that principle is best expressed.

- **Risk of Ethical Oversights Due to Complexity**

Perhaps the most sobering ethical risk of interdisciplinary collaborative research is simply that its complexity creates opportunities for ethical problems to fall through the cracks. When responsibility for ethical oversight is distributed across a large team, when different members are operating under different ethical frameworks, when communication is impeded by disciplinary jargon or logistical challenges, and when the sheer scale of a project makes it difficult for any individual to maintain a comprehensive view under these conditions, ethical problems that might be immediately apparent in a smaller, more homogeneous team can go unrecognised. Research misconduct, questionable research practices, exploitation of participants, unfair attribution of credit, and inadequate data protection can all emerge not from individual malice but from the structural conditions of large-scale collaborative research.

Need for Unified Ethical Frameworks

- **Limitations of Discipline-Specific Ethical Codes**

The limitations of discipline-specific ethical codes in interdisciplinary research are not merely practical; they reflect a deeper conceptual problem. Discipline-specific codes were developed to regulate research conducted by members of those disciplines, operating within their disciplinary traditions, for audiences of disciplinary peers. They take for granted a set of shared assumptions about what research is,

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how it should be conducted, who it is accountable to, and what counts as misconduct that cannot be assumed in interdisciplinary settings. When researchers from different disciplines bring their respective codes to a shared project, the result is not a unified ethical framework but a patchwork of potentially conflicting requirements. Without a meta-level framework for navigating these conflicts, teams are left to resolve them on an ad hoc basis, often poorly.

- **Importance of Developing Common Ethical Standards**

The development of common ethical standards for interdisciplinary research does not require the abandonment of discipline-specific ethical traditions. Rather, it requires the development of an overarching framework that identifies the core ethical principles applicable to all research, regardless of discipline and guides how those principles should be applied in collaborative, cross-disciplinary settings. Such a framework would need to address questions of authorship and attribution, data governance and sharing, informed consent, conflict of interest, team accountability, and publication ethics in ways that are genuinely applicable across disciplinary contexts.

Efforts toward such a framework are underway. The Committee on Publication Ethics (COPE, 2024) has developed guidelines for authorship and publication ethics that aspire to cross-disciplinary applicability, though their adoption remains uneven. The CRediT taxonomy represents a partial solution to the attribution problem. The European Science Foundation's authorship guidelines (2026) provide a model for addressing the intersection of legal, ethical, and practical dimensions of authorship in international, interdisciplinary collaborations. These initiatives represent important steps, but a comprehensive, broadly adopted framework for interdisciplinary research ethics does not yet exist.

- **Role of Global and Institutional Guidelines**

At the global level, documents such as the Singapore Statement on Research Integrity (2010) and the European Code of Conduct for Research Integrity provide statements of shared ethical principles that apply across national and disciplinary contexts. These documents are valuable as normative anchors, but they are not sufficiently detailed or specific to serve as operational guides for the management of large interdisciplinary projects. At the institutional level, research universities and funding agencies play a critical role in translating general ethical principles into specific policies and practices. Institutions that have developed interdisciplinary ethics committees, cross-institutional data governance agreements, and explicit policies on authorship and contribution in collaborative research provide models that others can learn from.

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Strategies to Overcome Ethical Challenges

- **Clear Authorship Guidelines**

The most effective way to prevent authorship disputes in collaborative research is to establish clear, written authorship agreements before the research begins. These agreements should specify the criteria for authorship, the expected contributions of each team member, the process for adding or removing authors as the project evolves, and the mechanism for resolving disputes if they arise. The importance of establishing such agreements early is emphasised by both COPE (2024) and ICMJE (2024), and the evidence suggests that teams that discuss authorship explicitly at the outset are significantly less likely to experience damaging disputes at the end. Pre-defined contribution tracking using tools like the CRediT taxonomy can make the process more transparent and less reliant on subjective judgment.

- **Strengthening Communication**

Effective ethical governance of interdisciplinary research depends on effective communication not only about research progress but also about ethical expectations, concerns, and disagreements. Teams should establish regular forums for discussing ethical issues as they arise, rather than waiting until a crisis occurs. These forums should be structured to ensure that all team members, regardless of seniority or disciplinary affiliation, have a genuine opportunity to raise concerns. Regular interdisciplinary workshops or seminars that expose team members to each other's ethical frameworks and professional norms can help build the mutual understanding needed for ethical collaboration (Newman, 2023). Communication protocols should address not only formal meetings but also informal channels, recognising that ethical concerns often surface in informal conversations before they receive formal attention.

- **Ethical Training and Awareness**

Many ethical failures in collaborative research result not from bad intent but from ignorance of researchers who have been trained in their own disciplinary ethical traditions without exposure to the ethical norms of the disciplines with which they now collaborate. Interdisciplinary ethics education that exposes researchers to the ethical frameworks of multiple disciplines can help address this gap. Hess et al. (2024) document the impact of a multi-year interdisciplinary faculty learning community on participants' ethical awareness and pedagogical practices in STEM contexts, finding that sustained interdisciplinary engagement significantly enhanced faculty members' ability to articulate and apply ethical principles across disciplinary contexts. Capacity-building programs in research ethics particularly in contexts where researchers from low-income countries collaborate with high-income country partners are essential for ensuring that all team members are equipped to participate fully in ethical decision-making.

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- **Effective Team Management**

The ethical quality of collaborative research is partly a function of its governance structure. Projects with clearly defined leadership roles, transparent decision-making processes, and effective mechanisms for surfacing and resolving conflicts are better positioned to maintain ethical standards than those without such structures. This means designating individuals with explicit responsibility for ethical oversight, not merely delegating ethical responsibility to whoever happens to be the principal investigator, and creating channels through which concerns can be raised without fear of retaliation. In large consortium-type projects, a dedicated research integrity officer or ethics coordinator may be warranted. The need for such structures is particularly acute in projects involving junior researchers or researchers from less powerful institutions, who are most vulnerable to the power asymmetries that collaborative research can generate.

- **Institutional Support and Policy Development**

Individual researchers cannot solve the structural ethical problems of interdisciplinary research on their own. Institutions, universities, funding agencies, government bodies, and professional associations play an indispensable role in creating the conditions for ethical collaborative research. This means developing interdisciplinary ethics committees capable of reviewing projects that do not fit neatly into existing disciplinary review structures; funding the development of cross-institutional data governance agreements that address ownership, sharing, and secondary use; establishing clear policies on authorship and intellectual property in collaborative research; and providing the administrative support and coordination infrastructure that large interdisciplinary projects require. The US Office of Research Integrity's Final Rule (2025) represents one example of regulatory attention to research integrity at a systemic level, emphasising the responsibility of institutions, not just individuals, for the ethical conduct of federally funded research.

Case Examples and Illustrations

The following case examples are drawn from documented challenges in real collaborative and interdisciplinary research contexts. They illustrate how abstract ethical challenges manifest in concrete research situations and how they might be addressed.

Consider a large international health research consortium involving institutions from the United Kingdom, Kenya, and India, studying the social determinants of maternal mortality. The project's data governance structure was not established clearly at the outset: different institutional partners had different understandings of who owned the data collected at each site, who could authorise secondary analyses, and what consent participants had given for data sharing. When the UK partner wished to share the dataset with a commercial research organisation,

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partners from Kenya and India objected because participants had not consented to commercial data use and the communities from which the data were drawn had not been consulted. The resulting dispute delayed publication, damaged collaborative relationships, and raised serious concerns about whether research participants' rights had been adequately protected. This case illustrates the practical consequences of failing to establish explicit, cross-institutional data governance agreements before research begins, a failure that Cengiz and Kabanda (2024) identify as systemic in African research ethics contexts.

A second illustrative case involves authorship disputes in a multi-disciplinary behavioural economics study combining expertise in economics, psychology, and public health. A graduate student in psychology made essential contributions to the study's qualitative component, designing interview instruments, conducting interviews, and performing thematic analysis, but was omitted from the final author list because the project's principal investigator, an economist, did not consider qualitative data collection to constitute a qualifying contribution under his understanding of authorship. The student's omission came to light only after publication, creating a conflict that could not easily be remedied and that highlighted the inadequacy of informal, discipline-specific authorship norms in genuinely interdisciplinary research contexts. The COPE (2024) authorship guidelines recommend that authorship criteria be discussed and agreed upon in writing at the outset of any collaboration precisely to prevent situations of this kind.

Future Directions in Interdisciplinary Research Ethics

The ethical challenges of interdisciplinary collaborative research are not going to diminish. If anything, they are likely to intensify as research teams grow larger, collaborations become more international, and emerging technologies, particularly artificial intelligence and big data, create new forms of research that challenge existing ethical frameworks in ways that have not yet been fully worked out. Several trends deserve particular attention in this context.

First, the rise of data-intensive research, including large-scale genomic studies, social media research, health data analytics, and artificial intelligence, creates new ethical challenges around consent, privacy, data ownership, and algorithmic accountability that cut across all traditional disciplinary boundaries. These challenges require ethical frameworks developed specifically for data-intensive, interdisciplinary contexts, not merely the extension of existing frameworks designed for more traditional research designs (Ferretti et al., 2022).

Second, the global dimension of interdisciplinary research is growing. As collaboration increasingly spans national borders and cultural contexts, the ethical frameworks governing that collaboration must grapple more seriously with global equity, with the rights of research communities in low- and middle-income countries,

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and with the structural power asymmetries embedded in the global research system. A research ethics adequate to this moment must be genuinely global, not merely Western frameworks applied universally, but frameworks developed through genuine dialogue among researchers from diverse cultural and national contexts (Appiah et al., 2024).

Third, there is a growing recognition of the need for institutional and systemic responses to the ethical challenges of interdisciplinary research, rather than relying exclusively on individual ethical conduct. This means investing in interdisciplinary ethics education, developing cross-institutional governance structures, strengthening research integrity oversight mechanisms, and ensuring that the incentive structures governing academic careers do not systematically reward unethical conduct. The evolution of ethical norms in research has always been driven by a combination of principled reflection and practical necessity; the current moment demands both.

Conclusion

This chapter has examined the ethical challenges that arise in collaborative and interdisciplinary research, tracing their sources in disciplinary diversity, team complexity, cultural difference, and inadequate governance structures. The central argument is that these challenges are not aberrations but structural features of interdisciplinary research as it is currently practised. They will not be resolved through the application of existing single-discipline ethical frameworks, nor through individual goodwill alone. What is needed is a combination of clearer guidelines, stronger institutional support, more effective team governance, better training, and ultimately the development of genuinely cross-disciplinary ethical frameworks adequate to the collaborative, global, and technologically mediated research of the twenty-first century.

The importance of accountability in collaborative research cannot be overstated. When responsibility is distributed across a large team, there is always a risk that no one feels fully accountable for ethical conduct. Preventing this outcome requires explicit attention to governance structures, clear assignment of ethical responsibility, and a culture in which all team members, regardless of seniority or disciplinary affiliation, feel both empowered and obligated to raise ethical concerns. Building such a culture is not easy, but it is essential. The integrity of science and the trust of the public it serves depend on it.

The future of interdisciplinary research is promising precisely because of its potential to address problems that no single discipline can solve. Realising that potential requires ensuring that the ethical foundations of collaborative research are as strong as its intellectual ambitions. This chapter has mapped the challenges; meeting them is the work of the research community as a whole.

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