Universal Manuscript Architecture (UMA): The Complete Guide to Academic Research Publishing

This document is the authoritative reference for SAGE's manuscript analysis system. It synthesizes current standards from ICMJE, EQUATOR Network, APA 7th Edition, Nature, Science, COPE, and all major publishers into a single, actionable architecture for evaluating and improving academic manuscripts across disciplines. Every section contains specific standards, checklists, and do/don't guidance calibrated to the 2023–2026 publishing landscape.

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1. Manuscript structure and content

1.1 Title optimization

Academic titles fall into four types, each with distinct strengths: **descriptive** (states topic without results — "Anticox versus placebo in Green's syndrome"), **declarative** (states the finding — "Anticox reduces pain in Green's syndrome"), **interrogative** (poses a question), and **creative/combined** (wordplay or metaphor, common in humanities). Evidence on citation impact is mixed: one PMC study of 2,623 articles found declarative titles yielded statistically higher citation counts, (PubMed Central) while Jamali & Nikzad (2011) found the opposite across 2,172 PLOS articles. (Wiley) The consensus is field-dependent — many clinical journals prohibit declarative titles, (BioMed Central) while Cell and Nature sometimes encourage them.

Optimal title length is 10–15 words (Nature targets ~66 characters). A UK REF analysis of 150,000+ papers confirmed shorter, more concise titles correlate with higher citation counts across most disciplines. (Wordvice)

SEO best practices for titles:

- Place primary keywords within the first 60–70 characters (SciSpace)
- Avoid abbreviations (ICMJE recommendation), hyphens, and special characters
- Use Google Scholar, PubMed MeSH Browser, and Google Trends to validate term popularity (Proof-reading-service) (proof-reading-service)
- Ensure PDF metadata includes title and author fields (Embry-Riddle Aeronautical Uni…)

Title construction — do vs. don't:

DO	DON'T
Use specific variables, population, context	Start with "A study of…" or "The effect of…" Wiley
Integrate 1–2 primary keywords naturally proof-reading-service	Use abbreviations or acronyms
Keep under 15 words	Include geographic names (reduces citations) Wiley
Make accessible to adjacent-field researchers proof-reading-service	Use numbered series titles ("Part I")

1.2 Abstract structures

The **Hyland five-move model** is the standard analytical framework: (M1) Introduction/Background, (M2) Purpose/Objective, (M3) Method, (M4) Results, (M5) Conclusion. Research shows M2, M3, and M4 are obligatory in nearly all abstracts, while M1 and M5 appear in roughly 50% of papers. Only ~20% of applied linguistics abstracts use all five moves. Academia.edu

Structured abstracts (with labeled subheadings) are required by most biomedical journals per ICMJE. **Unstructured abstracts** (single paragraph) are standard in humanities, social sciences, and some basic science journals but must still contain all five content elements.

Word limits by field:

Field	Typical Word Limit
Medical/Clinical (ICMJE)	200–250 words (structured)
Nature journals	~200 words (summary paragraph)
APA-style Psychology	150–250 words
Social Sciences	150–300 words
Humanities	100–300 words (variable)
Engineering/CS conferences	150–200 words

Graphical abstracts are increasingly required by Elsevier and other publishers. Papers with visual summaries receive more social media engagement and downloads. An abstract must never contain references, undefined abbreviations, or new information absent from the main text; PubMed Central ICMJE mandates consistency between abstract and body text. ICMJE

1.3 Keywords selection and synonym mapping

Step-by-step keyword selection process: (1) List core concepts — central topic, population, methods, key variables, outcomes. (2) Extract 5–8 concise phrases. proof-reading-service (3) Align with controlled vocabularies — MeSH terms for biomedical, EMTREE for Embase, PsycINFO Thesaurus for psychology. (4) Analyze keywords in similar recently published articles. (5) Test in Google Scholar for competition and relevance. (6) Include at least one broad and several specific terms. proof-reading-service

Synonym mapping is critical for discoverability: map common synonyms ("artificial intelligence" ↔ "machine learning"), spelling variations ("behaviour" vs. "behavior"), and broader/narrower versions ("renewable energy" → "solar power"). proof-reading-service The NLM's **MeSH on Demand** tool generates relevant terms from pasted abstract text. MSK Library Most journals specify **3–8 keywords** (APA recommends 3–5). Don't duplicate exact title words — use synonyms to expand the search footprint.

1.4 Introduction architecture: the CARS model

The **CARS model** (Create a Research Space), developed by John Swales (1990), is the dominant framework for introduction structure University of Southern California usc and subsumes the Context-Gap-Resolution model and funnel structure:

Move 1 — Establishing a Territory: Wikipedia Claim importance, make topic generalizations, and review prior research. usc Signal words: "Research on X has grown significantly…," "It is widely accepted that…"

Move 2 — Establishing a Niche: Counter-claim, indicate a gap, raise a question, or continue a tradition. usc Signal words: "however," "nevertheless," "few studies have examined," "remains unclear," "no study has." This move is the argumentative engine of any introduction. Cuni

Move 3 — Occupying the Niche: Outline purposes, announce present research, optionally announce principal findings, and indicate article structure. usc Signal words: "The aim of this study was to…," "This paper describes…"

Research questions should appear after establishing the gap (end of Move 2). Liberty University Distinguish between exploratory questions and confirmatory hypotheses. **Typical introduction length** is 500–1,500 words for full articles, containing ~10–25% of total manuscript length, with moderate citation density (15–30 references).

1.5 Methods section and reproducibility

Methods must contain **sufficient detail for replication by a fellow expert** (Nature standard). Nature All methodological decisions that could affect outcomes must be reported, including negative controls, randomization procedures, and blinding. The **EQUATOR Network** maintains 500+ reporting guidelines: Wolters Kluwer ResearchGate

Study Type	Guideline	Items
Randomized Controlled Trials	CONSORT 2025	30
Systematic Reviews	PRISMA 2020	27
Observational Studies	STROBE	22
Diagnostic Accuracy	STARD 2015	30
Qualitative (interviews/FGs)	COREQ	32
Animal Research	ARRIVE 2.0	21
Case Reports	CARE	13
Prediction Models	TRIPOD/TRIPOD+AI	22+

Field-specific requirements: Lab protocols require reagent details, equipment models, and software versions. Survey research requires questionnaire validation, reliability (Cronbach's α), and response rates. Computational methods require algorithm descriptions, hyperparameters, hardware specs, and code availability. Clinical studies require IRB approval, informed consent, inclusion/exclusion criteria, and trial registration. Ethics approval statements belong in the Methods section, referencing the Helsinki Declaration (revised 2024) and including the IRB/ethics committee name and approval number. (ICMJE)

1.6 Results presentation

APA guidelines for choosing presentation format: ≤3 numbers → state in text; 4–20 numbers → use a table; >20 numbers → use a figure. (Scribbr) Never duplicate data across text, tables, and figures. (APA) Nature articles typically include **5–6 display items** and up to **50 references**. (Mit) (Nature)

Statistical reporting format (APA 7th): Report the test statistic, degrees of freedom, exact p-value, effect size, and 95% confidence interval. (Essays UK) Round most statistics to two decimal places. (Purdue OWL) Italicize statistical symbols (*M*, *SD*, *t*, *F*, *p*, *r*). (StudyCrumb) No leading zero for statistics bounded by 1.0 ($p = .034$, $r = .45$); include leading zero otherwise ($M = 0.55$). (Essays UK)

Example formats: t-test — $t(33) = 2.10$, $p = .034$, $d = 0.72$; ANOVA — $F(3, 27) = 5.94$, $p = .007$, $\eta^2 = .40$; Correlation — $r(123) = .61$, $p = .011$.

Negative results must be reported with the same rigor as positive results. ICMJE mandates publishing negative findings. Frame objectively ("No statistically significant association was found between X and Y, $\beta = 0.03$, 95% CI [−0.09, 0.15]") and include effect sizes and CIs for non-significant results. Never hide null findings or spin them as positive.

1.7 Discussion organization

The Discussion follows an **inverted pyramid** — specific to general: University of Southern California (1) Restate principal findings factually (1 paragraph). eCORRECTOR (2) Interpret findings and assess whether they were expected. Sacred Heart University (3) Compare with prior literature, addressing both agreements and discrepancies. Scribbr (4) Explain unexpected results with reasoned interpretations. San Jose State University (5) Discuss theoretical and practical implications. (6) Acknowledge limitations. (7) Propose concrete future directions. (8) Deliver a confident concluding statement.

Hedging for novelty without overclaiming: Use "These findings suggest…" and "Our results indicate…" rather than "This proves…" or "We have definitively shown…" Specify scope ("In the context of [population]…"), acknowledge alternative explanations, and never claim causation from correlational data or use "prove."

1.8 Limitations framing

The goal is to present limitations honestly while demonstrating methodological awareness. Cambridge Proofreading **Three-part framework:** ~20% identifying the constraint, ~65% explaining impact on results, ~15% suggesting how future research could address it. **Recommended length:** 200–500 words. Yomu AI

Categories: Methodological (sample size, lack of randomization), Scope (limited geography, narrow timeframe), Generalizability (convenience sampling, WEIRD populations), Data (missing data, measurement error), Analytical (software limitations, model assumptions).

Constructive strategies: Frame as design trade-offs ("We chose a narrow sample to control for confounders, which limits generalizability but increases internal consistency"). Proof-reading-service Use neutral language — avoid "unfortunately" or "regrettably." Ref-n-Write Contextualize within the field ("Most studies of this nature share this limitation"). Convert every limitation into a concrete future research question. Yomu AI Proof-reading-service

❌ **Poor:** "Unfortunately, many parameters were approximated, making our results unreliable." ✅ **Good:** "Several parameters were approximated due to constraints common in this study type. Sensitivity analyses indicated overall patterns remained robust. Future work could employ direct measurement techniques to validate these findings."

1.9 Conclusions best practices

Conclusions should synthesize key findings (not merely summarize), state broader significance, provide practical recommendations, and deliver a **memorable take-home message**. PubMed Central University of Southern California They must not introduce new data, citations, or interpretations absent from the Discussion. Sacred Heart University Typical length is 1–3 paragraphs (~5–10% of the paper). Propose specific future research questions linked to identified limitations, and end with a confident, declarative statement connecting back to the introduction's opening framing. Scribbr

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2. Reporting guidelines by study type

2.1 CONSORT 2025 — Randomized controlled trials

CONSORT 2025 was published in April 2025 (Wikipedia) across BMJ, JAMA, Lancet, Nature Medicine, and PLOS Medicine, (PLOS) superseding CONSORT 2010. It expanded from 25 to **30 items**, adding 7 new items, revising 3, and deleting 1. (PubMed Central) Key innovations include integrating items from extensions (Harms, TIDieR) and adding a new **Open Science section** (PubMed Central) (Items 25–28) requiring trial registration, protocol access, statistical analysis plan access, and data sharing statements.

Required elements: CONSORT flow diagram documenting enrollment → allocation → follow-up → analysis (PubMed) with exact numbers; a priori sample size calculation; randomization sequence generation and allocation concealment; blinding details; ITT analysis; all pre-specified primary and secondary outcomes with effect sizes and CIs; all important harms per group.

Common errors to flag: Missing flow diagram, no sample size justification, unreported allocation concealment, no ITT analysis, selective outcome reporting, missing CIs or effect sizes, no trial registration number.

2.2 CONSORT-AI and SPIRIT-AI

Published September 2020 in Nature Medicine, BMJ, and Lancet Digital Health. (The Alan Turing Institute) **CONSORT-AI** adds 14 items for AI intervention trials: (PubMed) AI system description (input data, output, algorithm type), version and configuration, instructions for use, integration into clinical workflow, error analysis, and AI-specific performance metrics (sensitivity, specificity, AUC). (PubMed) **SPIRIT-AI** adds 15 items for AI trial protocols, including inclusion/exclusion criteria at both participant and input data levels, (PubMed) data quality standards, and handling of AI failures. A 2025 Lancet letter confirmed CONSORT 2025 did not integrate AI extensions (The Lancet) — use **both** core and AI-specific guidelines together.

2.3 STROBE — Observational studies

The STROBE Statement provides a **22-item checklist** for cohort, case-control, and cross-sectional studies. 18 items are common; 4 have design-specific variations (PLOS) covering participants (Item 6), statistical methods (Item 12), descriptive data (Item 14), and outcome data (Item 15). (PubMed Central) Key requirements include reporting efforts to address bias, explaining study size determination, reporting both unadjusted and adjusted estimates with CIs, and discussing limitations including bias and imprecision. Extensions include STREGA (genetics), RECORD (routinely-collected data), and STROBE-ME (molecular epidemiology).

2.4 PRISMA 2020 — Systematic reviews

PRISMA 2020 replaced PRISMA 2009 with a **27-item checklist** (PubMed Central) organized into 7 sections. Key additions: certainty of evidence assessment (GRADE), emphasis on synthesis methods beyond meta-analysis, full search strategy requirement for all databases, and data/code sharing items. The **PRISMA 2020 flow diagram** must report records identified per source, duplicates removed, records screened, reports assessed for

eligibility, and exclusion reasons. **PROSPERO registration** is required before data extraction begins. Major extensions: PRISMA-S (search reporting), PRISMA-ScR (scoping reviews, Equator Network 22 items), PRISMA-P (protocols), PRISMA-NMA (network meta-analyses), PRISMA-LSR (living reviews, 2023).

2.5 COREQ — Qualitative research

The 32-item COREQ checklist PubMed covers three domains: **Research Team and Reflexivity** Harvard (interviewer identity, credentials, gender, experience, relationship with participants), **Study Design** Harvard (methodological orientation, sampling, setting, data collection including saturation and transcription), and **Analysis and Findings** (coding, theme derivation, quotation presentation, data-findings consistency). It applies specifically to interviews and focus groups; Oxford Academic for broader qualitative designs, **SRQR** (21 items, 2014) provides a complementary checklist.

2.6 Additional critical guidelines

STARD 2015 (diagnostic accuracy): 30-item checklist PubMed + flow diagram requiring cross-tabulation of index test vs. reference standard, diagnostic accuracy estimates with CIs, and handling of indeterminate results. **ARRIVE 2.0** (animal research): 21 items in two prioritized sets — the **Essential 10** (minimum: study design, sample size, inclusion/exclusion, randomization, blinding, outcomes, statistics, animals, procedures, results) plus 11 recommended items. Springer **CARE** (case reports): 13 items requiring a visual timeline and patient perspective. **TRIPOD+AI** (prediction models, 2024): Updated for ML/AI models, emphasizing calibration + discrimination, open science, and full model presentation. PubMed Central

Guideline Selection Matrix:

Study Type	Primary Guideline	Key Feature
RCT	CONSORT 2025	Flow diagram + open science
RCT with AI	CONSORT 2025 + CONSORT-AI	AI-specific reporting
Systematic review	PRISMA 2020	Flow diagram + registration
Cohort/case-control/cross-sectional	STROBE	Design-specific items
Qualitative (interviews/FGs)	COREQ	Reflexivity emphasis
Diagnostic accuracy	STARD 2015	2×2 table + flow diagram
Prediction model (AI/ML)	TRIPOD+AI	Calibration + discrimination
Animal research	ARRIVE 2.0	Essential 10 priority
Case report	CARE	Timeline required
Quality improvement	SQUIRE 2.0	Context emphasis

3. Writing standards and style

3.1 Voice and perspective

APA 7th Edition recommends active voice as the default (Gvltec) and explicitly endorses first person ("we" for multi-author, "I" for solo). Passive voice is acceptable in expository writing and when the focus should be on the recipient of the action. **AMA 11th Edition** advises using "active voice judiciously to enhance readability without sacrificing objectivity." (Grokipedia)

By section: Introduction uses a mix (active for claims, passive for general knowledge). Methods traditionally used passive in biomedical fields ("Blood samples were collected") but active is increasingly accepted across all fields. Results prefer active ("Analysis revealed…"). Discussion strongly favors active ("Our findings suggest…").

Field preferences: Psychology (APA) explicitly encourages first person. Humanities standard is first-person argumentation ("I argue that…"). Engineering/CS uses mixed voice. Chemistry is passive-dominant but shifting. Physics increasingly uses "we" in arXiv papers. The anthropomorphizing construction "The study argues…" should always be avoided — the authors argue, not the study.

3.2 Causal language vs. correlational hedging

Causal language ("X caused Y," "X increased Y") is appropriate **only** for randomized controlled experimental designs with proper manipulation and control of confounders. All observational studies — cross-sectional, cohort, case-control, survey-based, retrospective — **require correlational hedging**. Research shows **34% of observational studies** use language too strong for causal inference. (Wiley Online Library)

Hedging hierarchy (weakest to strongest):

Strength	Terms	Context
Very Weak	"may," "might," "could," "appears to"	Preliminary/exploratory findings
Weak	"suggests," "is consistent with"	Correlational/observational studies
Moderate	"indicates," "supports"	Well-controlled studies, convergent evidence
Strong	"demonstrates," "establishes," "shows"	RCTs, well-replicated experiments
Very Strong	"proves," "confirms"	Almost never appropriate in empirical research

Causative verbs to flag in observational studies: increase, decrease, improve, cause, lead to, result in, produce, prevent, reduce, enhance, promote. **Associational alternatives:** is associated with, is correlated with, is related to, co-occurs with, predicts (statistically).

3.3 Tense usage by section

Section	Tense	Rationale	Example
Introduction	Present / present perfect	Established knowledge	"Research shows…" / "Studies have demonstrated…"
Methods	Past	What was done	"Participants completed a survey"
Results	Past	What was found	"The analysis revealed…"
Discussion	Present	Interpretation and implications	"Our findings indicate that…"
Conclusions	Present	Generalizations, future directions	"This research contributes to…"
Abstract	Mixed	Matches section conventions	Past for methods/results; present for conclusions

3.4 Jargon, readability, and precision

Academic papers typically score at **Flesch-Kincaid grade level 13–17**, with medical abstracts often less readable than full texts. For interdisciplinary journals, target grade ≤12. For plain language summaries, target grade 8–10. Define all acronyms on first use in both the abstract and body text (they are separate entities). (ICMJE) (JMIR Publications) Reserve "significant" exclusively for statistical significance in quantitative papers; use "substantial," "notable," or "considerable" for non-statistical emphasis.

Precision requirements: Replace vague quantifiers ("many participants") with specific numbers ("78 of 120 participants, 65%"). Report percentages to one decimal place, p-values to 2–3 decimals (exact), correlation coefficients to 2 decimals, and effect sizes to 2 decimals. (University of Lincoln) Use SI units with a space between number and unit. Match significant figures to measurement precision.

3.5 Common writing errors to flag

Dangling modifiers (especially common in scientific writing due to passive voice): ❌ "After heating the compound, the reaction was recorded" → ✅ "After heating the compound, we recorded the reaction." (Purdue OWL) (Papyr) **Nominalization:** ❌ "We performed an analysis of the data" → ✅ "We analyzed the data." (Researcher.Life) **"Which" vs. "that"** (American English): "that" introduces restrictive/essential clauses (no commas); "which" introduces nonrestrictive clauses (with commas). (Grammarly) **Split infinitives** are not grammatical errors — split when clarity demands it. Other errors: comma splices, subject-verb disagreement with complex subjects, misuse of "affect/effect," "i.e./e.g.," "comprise/compose," and "since/because."

Five grammar myths debunked: (1) "Never split infinitives" — acceptable in modern guides. ThinkSCIENCE (2) "Never start with And/But" — acceptable. (3) "Never end with a preposition" — artificial rule. (4) "Always use passive in science" — APA/AMA prefer active. (5) "Never use first person" — APA explicitly endorses I/we.

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4. AI disclosure requirements (2023–2026)

4.1 Universal principles across all major publishers

Eight consensus principles have emerged: (1) **AI cannot be an author** — universal prohibition (ICMJE, COPE, all publishers) because AI cannot satisfy the accountability criterion. Thesify COPE (2) **Human accountability is non-negotiable** — authors bear full responsibility for all content. COPE Edu (3) **Transparency is mandatory** — disclose AI use with specificity (tool name, version, purpose). (4) **Grammar/spelling tools** (Grammarly, basic spell check) are generally exempt from disclosure. (5) **AI-generated images** are almost universally prohibited with narrow exceptions for AI-specific research. (6) **Peer reviewers must not upload manuscripts into AI tools** (confidentiality). Nature +2 (7) **AI cannot be cited as an authoritative source.** (8) **All AI output must be verified** for accuracy, bias, hallucinations, and plagiarism. Uvm

4.2 Publisher-specific policies

Nature/Springer Nature: LLM use must be documented in the Methods section. "AI assisted copy editing" (improvements to human-generated text for readability/style) does not require disclosure. Tamusa AI-generated images are prohibited. Nature Reviewers must not upload manuscripts into AI tools. Nature +2

Science/AAAS: Initially the most restrictive (2023: AI text = "scientific misconduct"). NIEHS Updated (2024) to allow AI with disclosure in the cover letter and acknowledgments. **Uniquely requires disclosure of the full prompt** used, plus the AI tool and version, in the Methods section.

ICMJE: AI writing assistance → disclose in Acknowledgments. AI for data collection/figure generation → disclose in Methods. Thepublicationplan AI output "may be incorrect, incomplete, or biased" — authors must carefully review. Editage Insights

Elsevier: Mandatory disclosure under a dedicated section titled "Declaration of Generative AI and AI-assisted Technologies." Provides a template: "During the preparation of this work the author(s) used [NAME TOOL] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication."

Wiley: AI may only be used as "a companion to the writing process, not a replacement." Authors must maintain documentation of all AI use. AI-created images, figures, and synthetic data are prohibited.

IEEE: AI use disclosed in Acknowledgments; must identify the system, specific sections affected, and level of use. Kennesaw Grammar/editing tools are "generally outside the intent" of the policy.

4.3 Disclosure classification matrix

AI Use Case	Disclosure Required?	Notes
Grammar/spelling tools	**Generally NO**	Universal consensus
AI copy editing (readability/style)	**NO** (Nature, IEEE) / **YES** (Elsevier)	Check specific journal
AI writing assistance (drafting, rewriting)	**YES — always**	Methods and/or Acknowledgments
AI for data analysis	**YES — in Methods**	Describe tool, version, validation
AI for code generation	**YES**	Cite tool version
AI for literature search	**YES** (most)	Describe search prompts and tools
AI for image generation	**PROHIBITED**	Near-universal ban
AI for figure/chart creation or manipulation	**PROHIBITED**	All major publishers

4.4 Sample disclosure statements

Standard (Elsevier template): "During the preparation of this work the author(s) used [TOOL NAME] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content of the publication."

Comprehensive multi-tool: "During the preparation of this work the authors used SCISPACE and ResearchRabbit to search for relevant literature, and ChatGPT (OpenAI, GPT-4) for language editing. For SCISPACE, prompts related to [TOPIC] were used. All suggested manuscripts were evaluated by reading titles and abstracts. After using these tools, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication." Singapore Management Univer…

Null declaration: "The authors declare that no generative AI or AI-assisted technologies were used in the preparation of this manuscript."

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5. Ethics and transparency

5.1 IRB/Ethics approval

Three levels of U.S. review: **Exempt** (minimal risk, fits exempt categories — administrative review only), **Expedited** (minimal risk, fits expedited categories — IRB chair or designated member review), **Full Board** (more than minimal risk, sensitive populations — convened meeting, majority vote). Tcnj International equivalents: REC (UK), Ethics Committee per EU Regulation 536/2014, REB (Canada), HREC (Australia).

U.S. Department of Health and … Statement template: "This study was approved by the [INSTITUTION] Institutional Review Board (Protocol #XXXX, approved [DATE]) and performed in accordance with the Declaration of Helsinki."

5.2 Informed consent and conflicts of interest

Written informed consent is required for most non-exempt human research. Waiver conditions (per 45 CFR 46.116(f)): minimal risk, waiver won't adversely affect rights, research impracticable without waiver. The **ICMJE Disclosure Form** (icmje.org) covers grants, consulting fees, travel support, patents, stock ownership, expert testimony, and leadership roles. ICMJE Both financial and non-financial conflicts must be disclosed.

5.3 CRediT author contribution taxonomy

The **14 CRediT roles** (ANSI/NISO Z39.104-2022) are: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. niso Each contributor may be designated as Lead, Equal, or Supporting. Adopted by 50+ organizations including Elsevier, Springer Nature, PLOS, Wiley, and Cell Press. CRediT describes contributions but does not define authorship — it complements ICMJE criteria.

5.4 Data availability and code sharing

Data should follow **FAIR principles** (Findable, Accessible, Interoperable, Reusable). ResearchGate Recommended repositories: **Dryad** (curated, DOI-minting, paid), **Figshare** (free, any file type), **Zenodo** (free, CERN-hosted, GitHub integration, DOI-minting), **OSF** (free, links preregistrations/preprints/data), and domain-specific repositories (GenBank, PDB, ICPSR). Use re3data.org and FAIRsharing.org to find appropriate repositories. AIP Publishing Code should be developed on GitHub/GitLab and archived in Zenodo for persistent DOI. PLOS Include a CITATION.cff file Zenodo and use open licenses (CC0 or CC-BY for data; MIT or Apache for code).

5.5 Preregistration and registered reports

Preregistration means posting a timestamped study plan to a public repository before data collection. OSF Support Major platforms: **OSF Registries** (general-purpose, multiple templates, DOI-minting), **AsPredicted** (streamlined, Wharton Credibility Lab), **ClinicalTrials.gov** (mandatory for clinical trials, ICMJE requirement), **PROSPERO** (systematic reviews). University of Melbourne Library **Registered Reports** have two stages: Stage 1 (introduction + methods + analysis plan, peer-reviewed before data collection, in-principle acceptance), Stage 2 (full manuscript with results, reviewed for protocol adherence). This format directly combats publication bias, p-hacking, and HARKing by basing acceptance on question importance and methodological rigor rather than results. Rochester

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6. Statistical reporting standards

6.1 P-values: the ASA statement and proper reporting

The **2016 ASA Statement** established six principles: (1) P-values indicate data incompatibility with a model, not the probability a hypothesis is true. (2) They do not measure effect size or importance. (3) Conclusions should not rest on whether p crosses 0.05. (4) Proper inference requires full reporting and transparency. (5) Selective reporting (p-hacking) renders analysis uninterpretable. (6) P-values alone do not provide good model evidence. CrossFit

Reporting rules: Always report **exact p-values** ($p = .032$, not $p < .05$). For very small values: $p < .001$. University of Lincoln Always accompany with effect size and confidence interval. Report all pre-specified analyses. State one-sided vs. two-sided and justify alpha level. Never write "p = NS," "p = 0.000," or "trending toward significance." Never conflate statistical with clinical significance.

6.2 Effect sizes

Measure	Context	Benchmarks (Cohen)
Cohen's *d*	Two independent groups	Small: 0.2, Medium: 0.5, Large: 0.8
Hedges' *g*	Small samples (<20/group); meta-analyses	Same scale (corrects *d*'s upward bias)
Odds Ratio (OR)	Case-control; logistic regression	Null = 1.0
Relative Risk (RR)	Cohort studies; RCTs	Null = 1.0
Hazard Ratio (HR)	Survival/time-to-event	Null = 1.0
η^2 / ω^2	ANOVA	Small: .01, Medium: .06, Large: .14
R^2	Regression	Proportion of variance explained

APA 7th: "Always provide some effect-size estimate when reporting a p value." Davidrjfikis Report in original units when meaningful and include standardized ES for cross-study comparison. Taylor & Francis Always include CI around the effect size. ASHA Publications

6.3 Confidence intervals

CIs convey three pieces of information simultaneously: point estimate, precision (width), and significance (whether interval includes null). **Always report CIs for all primary analyses.** Format: "Mean difference = 3.4 points, 95% CI [1.2, 5.6], p = .003." A non-significant result with a wide CI is **inconclusive** (not proof of no effect). A significant result with a narrow CI near zero may be statistically but not clinically meaningful. Standard is 95% CI; 90% CI is used in equivalence testing (TOST at $\alpha = 0.05$).

6.4 Multiple testing corrections

Bonferroni (adjusted α = α/n): Most conservative; use for small numbers of pre-specified confirmatory tests. **Holm Step-Down**: Uniformly more powerful than Bonferroni; generally preferred. **Benjamini-Hochberg** (FDR control): Less conservative; best for exploratory research with many tests, screening studies, and genomics. Report which correction was applied, why, the number of tests, and both uncorrected and corrected p-values.

6.5 Power analysis and sample size

A priori power analysis is required. Must specify: alpha level, desired power (typically **0.80 or 0.90**), expected effect size with justification (from pilot data, prior literature, or MCID), statistical test, and directionality. Report in Methods. Example: "Sample size was calculated to detect d = 0.5 with 80% power at α = 0.05 using an independent-samples t-test, requiring 64 per group. Accounting for 15% dropout, we aimed to recruit 75 per group." **Post-hoc power analysis is discouraged** — observed power is a direct transformation of the p-value and provides no additional information.

6.6 Reporting null results and Bayesian approaches

The **TOST equivalence testing procedure** should be used to claim practical equivalence. Specify equivalence bounds based on the smallest effect size of interest (SESOI). When the 90% CI falls entirely within bounds, declare equivalence. Always distinguish between "evidence of absence" (equivalence test) and "absence of evidence" (underpowered NHST).

Bayesian approaches are preferred when quantifying evidence for the null, when prior information should formally contribute, or when intuitive probability statements are desired. **Bayes factors** (BF10): 1–3 = anecdotal, 3–10 = moderate, 10–30 = strong, >100 = extreme evidence. **Credible intervals** (CrI) have an intuitive interpretation: "Given observed data, there is a 95% probability the true value lies within this interval." The **BARG guidelines** (Nature Human Behaviour, 2021) specify reporting requirements: prior distributions with justification, MCMC diagnostics (R-hat, trace plots, effective sample size), posterior summaries, and sensitivity analyses.

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7. Journal selection strategies

7.1 Metrics landscape

Impact Factor (IF) measures average citations per article over 2 years; favors review-heavy journals and can be gamed. **CiteScore** uses a 4-year window across Scopus's 22,000+ journals, including all document types. **Eigenfactor** weights citations by source prestige (PageRank-like), excludes self-citations, and is freely available at eigenfactor.org. **SJR** (SCImago) weights citations over 3 years, capping self-citations at 33%. **SNIP** normalizes by citation potential of the field, enabling cross-discipline comparison. **No single metric suffices** — DORA signatories discourage IF-based evaluation of individual researchers.

7.2 Scope matching and journal finder tools

The most important step is reading the journal's **Aims & Scope statement** and browsing recent issues. Key tools: **JANE** (jane.biosemantics.org, PubMed-based, best for biomedical), **Elsevier Journal Finder** (journalfinder.elsevier.com), **Springer Nature Journal Suggester** (journalsuggester.springer.com), **JournalGuide** (multi-publisher). Also analyze citation patterns in your own references — where are the most-cited papers published?

7.3 Predatory journal identification

Beall's criteria red flags: Same editorial board across journals, no geographic diversity, unusually rapid peer review, unprofessional website, overly broad scope, unsolicited flattering emails. **Verification protocol:** (1) Check DOAJ listing (positive signal). (2) Check COPE membership (positive signal). (3) Search Beall's archived list at beallslist.net (negative signal). (4) Verify Scopus/Web of Science indexing. (5) Run the **Think.Check.Submit** checklist (thinkchecksubmit.org). (6) Check Cabell's Predatory Reports (subscription-based, 65+ criteria).

7.4 Open access models and APCs

Gold OA = published in fully OA journal (APC required). **Green OA** = self-archive accepted manuscript in repository (usually free). **Hybrid OA** = pay APC for OA in subscription journal. **Diamond/Platinum OA** = free for authors and readers (~29,000 journals globally, ~45% of OA articles). **Plan S** (cOAlition S) requires immediate OA under CC BY 4.0 for all publicly funded research.

Typical APCs: Nature flagship — **€10,850 (~$11,390)**. Nature Communications — **$6,990**. Science Advances — **$4,500**. Scientific Reports — **$2,690**. PLOS ONE — **$2,382**. Frontiers — $500–$2,950. MDPI — $500–$2,700. Global average APC — ~$1,626. Total global APC spending reached **$2.54 billion in 2023**.

7.5 Acceptance rates and timelines

Journal	Acceptance Rate	First Decision
NEJM	~5%	Weeks
Nature	~8%	Days (desk), weeks–months (review)
Science	<7%	Days (screening, ~84% rejected)
BMJ	~7% (4% research)	Weeks
PLOS Biology	~10%	7 days median
PLOS ONE	~31% (down from ~50% in 2020)	40 days median
Typical field journals	20–40% (average 32%)	4–12 weeks

By field: Biomedical: first decision 2–8 weeks, total publication 4–12 months. Physical sciences/engineering: 3–8 months. Social sciences/humanities: 6–18 months. Mathematics: 6–24 months (longest). Target 3–5 journals before writing for a realistic cascading strategy.

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8. Cover letter best practices

8.1 Essential components

Every cover letter must include: (1) Editor addressed by name with correct title. (2) Manuscript title and article type. (3) **Significance paragraph** — background → gap → key findings → why it matters (2–3 sentences). (4) **Fit paragraph** — why this journal specifically, referencing aims/scope and recent related publications. (5) Originality statement ("not published elsewhere, not under consideration by another journal"). (6) Author approval statement. (7) COI disclosure, ethical approval (with IRB number), and funding. (8) Reviewer suggestions if requested. (9) Corresponding author contact details.

Per Cell Press editors, the most effective letters: **start with context** (what was known), **state motivation** (why now), **convey the conceptual advance** (what's new), and **articulate significance** (why readers should care). Let the science speak — avoid "groundbreaking" or "paradigm-shifting."

8.2 Common cover letter mistakes

- ❌ Addressing "Dear Sirs" (many editors are female) or using the wrong editor/journal name
- ❌ Copying the abstract verbatim instead of explaining significance conversationally
- ❌ Excessive self-praise or hyperbolic language
- ❌ Generic letters not tailored to the specific journal
- ❌ Exceeding one page
- ❌ Omitting required declarations (originality, conflicts, ethics)
- ❌ Including formatting preferences or autobiographical narratives

8.3 Cover letter template

```
Dear Dr. [Last Name]:

I am pleased to submit "[Title]" for consideration as a [Article Type] in
[Journal Name].

[1–2 sentences on background/gap] Despite advances in [field], [specific
gap] remains poorly understood. [1–2 sentences on findings] Using [method],
we demonstrate that [key finding], which [significance/implication].
```

We believe this work suits [Journal Name] because [specific reference to journal scope, recent related articles, readership interest].

[Reviewer suggestions if requested]

We confirm this manuscript is original, not published previously, and not under consideration elsewhere. All authors approved the manuscript. [Ethics statement]. The authors declare no competing interests. [Funding].

Sincerely,
[Corresponding Author]

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9. Suggested reviewers

9.1 How to identify and present reviewers

Suggest **3–6 qualified experts** (more than the minimum for editor flexibility). Finding strategies: mine your reference list, use forward/backward citation analysis, search PubMed/Google Scholar/Scopus for prolific recent authors on your topic, check conference presenters, and review editorial boards of related journals. Include **2–3 opposed/excluded reviewers** for active competitors or those with personal conflicts.

Conflicts to avoid: Co-authors within last 2–5 years (BMC: 5 years; many journals: 2–3 years), same institution, former advisor/advisee relationships (permanent COI), close collaborators or co-investigators on grants, financial relationships, family/personal relationships.

Diversity matters: Include geographic diversity, career-stage diversity (mix senior experts with early-career researchers), gender balance, and institutional variety. Nature Portfolio explicitly encourages geographic, gender, and racial/ethnic diversity in reviewer suggestions. Studies show author-suggested reviewers rate manuscripts 30–42% more favorably than editor-selected reviewers.

Format: Name, affiliation, institutional email, 2–3 sentence justification linking the reviewer's specific expertise to your manuscript's content. Always verify email addresses and recent publication activity.

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10. Response to reviewers

10.1 Structure and format

Use a **three-column table** (Reviewer Comment | Author Response | Location of Change) or numbered point-by-point format. Number every comment (R1.1, R1.2…). Group by reviewer. Use distinct formatting: reviewer comments in **bold**, responses in regular text, new manuscript text in *colored italic*. Begin the response

document by thanking reviewers and summarizing major revisions. Submit two manuscript copies: one clean, one with tracked changes.

10.2 Diplomatic language for disagreements

Situation	Example Language
Acknowledging while disagreeing	"We appreciate this insightful comment. While we understand this perspective, we respectfully maintain that [evidence]…"
Pointing out misunderstanding	"We apologize that our original text was unclear. To clarify…"
Declining a request	"This excellent suggestion is beyond the scope because [specific reason]. We have added it as a future direction on page X."
Providing counter-evidence	"You raise an important point. However, we believe [X] is more appropriate because [citation/data]…"

Noble's ten rules (PLOS Computational Biology): Respond to every point without exception. Begin each response with a direct answer. Make responses self-contained by quoting changes directly. Write the "venting" version first, wait several days, then write the real version. Never convey that the reviewer lacks intellectual capacity. If a reviewer misunderstood, accept the blame for unclear writing.

10.3 When to appeal vs. accept rejection

Grounds for appeal: reviewer factual errors demonstrable with evidence, fundamental misunderstanding of methodology, new data directly addressing concerns, procedural issues in review. **Appeals are rarely successful** overall and always take weeks minimum. Desk rejection appeals have the lowest success rate. When rejection is based on scope/fit or fundamental design issues, move to another journal. **Cascading/transfer submission** options exist at Nature Portfolio (one-click resubmission with referee reports), Springer Nature, Science family (~80% direct), Elsevier, and PLOS (PLOS ONE accepts transfers from selective journals).

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11. Figures and tables

11.1 Resolution, format, and size requirements

Image Type	Minimum DPI	Preferred Formats
Photographs	300	TIFF, high-quality JPEG
Line art (graphs, diagrams)	600–1200	EPS, PDF, SVG

Image Type	Minimum DPI	Preferred Formats
Combination (photo + text)	600	TIFF, EPS

Size: Single column width = **89 mm** (Nature standard); double column = **183 mm**; maximum page depth = **247 mm**. Font in figures: **5–7pt sans-serif** (Arial or Helvetica) at final print size. Panel labels: **8pt bold lowercase** (a, b, c). **RGB color mode** recommended for submission (Nature explicitly recommends RGB; automatic CMYK conversion at production). File size ≤**10 MB** per figure.

11.2 Color accessibility

The **Okabe-Ito palette** is the gold standard for categorical data, explicitly recommended by Nature Methods. For continuous data, use the **viridis family** (viridis, magma, plasma, inferno, cividis) — perceptually uniform, CVD-safe, and grayscale-safe. **Never use red-green combinations** (~8% of males have red-green color blindness). Use green-magenta instead for fluorescence. **Avoid rainbow/jet colormaps** (perceptually non-uniform). Limit simultaneous colors to 6–8 categories. Test figures with Color Oracle (desktop simulator) or Coblis (web-based). WCAG requires ≥3:1 contrast for graphical objects and ≥4.5:1 for text.

11.3 Modern visualization types and data presentation

Replace bar charts with dot plots, violin plots, or box plots overlaid with individual data points. A systematic review found **47.7% of papers** still inappropriately use bar graphs for continuous data. Bar graphs create a "Zone of Irrelevance" (below-mean values that never occurred) and a "Zone of Invisibility" (values above error bar). PLOS Biology, eLife, JBC, and Nature Publishing Group now encourage/require showing individual data points.

Error bars: 95% CI preferred for statistical inference (non-overlapping 95% CIs ≈ significant difference). SD shows data variability (descriptive). SEM shows precision of mean (always smaller than SD: SEM = SD/√n). **Always define error bar type in the caption** and include sample sizes per group. Figure captions must be **fully self-contained** — readers should understand the figure without reading the main text.

11.4 Common figure/table mistakes to flag

- **3D charts** — distort perception; always use 2D
- **Truncated y-axes** — exaggerate small differences; start bar charts at zero
- **Rainbow colormaps** — perceptually non-uniform; use viridis alternatives
- **Undefined error bars** — must specify SD/SEM/CI in every caption
- **Missing axis labels** — label all axes with "Variable (unit)"
- **Duplicating data** — present each datum in only one format (text OR table OR figure)
- **Chartjunk** — eliminate unnecessary 3D effects, gridlines, and decorative elements (Tufte's data-ink ratio principle)

- **Tables that should be figures** and vice versa — Nature: "data in small tables can generally be stated briefly in text"

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12. Citations and references

12.1 Citation density, recency, and self-citation

Typical citation ranges by field: Biomedical/clinical: 30–50; Chemistry: ~50; Computer science: 20–40; Humanities/social sciences: 50–100+; Psychology: 40–60. Review articles: 50–150+. Short communications: 10–25. Trend: mean per-article references rose from ~29 (2003) to ~45 (2019) across fields.

Recency: 30–50% of references within the past 5 years for most fields. Fast-moving fields (AI, genomics): >50% within 5 years. Older citations are appropriate for seminal works, classic methodology, and historical context. **Self-citation: ≤15–20%** is the general consensus; most fields median 10–15% among highly cited researchers. Red flags: >25% self-citations, self-citations added after review, or self-citations not meaningfully contributing.

12.2 Major reference formatting styles

APA 7th (social/behavioral sciences): Author-date; up to 20 authors; "https://doi.org/xxxxx" format. **Vancouver/Numbered** (biomedical, ICMJE): Numbered [1] in order of appearance; first 6 authors then "et al." **IEEE** (engineering/CS): Square brackets; initials before surname; sequential numbering. **Chicago Author-Date** (humanities): Author Year; alphabetical reference list. Always include DOIs formatted as URLs when available.

12.3 Special citation types

Preprints: Always indicate [Preprint] status; include repository name and DOI. If subsequently published, cite the published version. **Datasets (APA 7th):** Author. (Year). Title (Version) [Data set]. Publisher. DOI. **Software:** Author. (Year). Name (Version X.X) [Computer software]. Publisher. URL/DOI. Include version numbers for reproducibility. **AI tools (APA 7th):** OpenAI. (2025). ChatGPT [Large language model]. https://chatgpt.com — describe usage in Methods and include prompt in text. **Personal communications:** In-text only; not in reference list (not recoverable). **Retracted papers:** Include [Retracted] in reference entry; avoid citing unless providing historical context.

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13. Field-specific variations

13.1 Cross-disciplinary structural differences

Feature	STEM	Social Sciences	Humanities
Structure	Strict IMRAD	Modified IMRAD or	Thesis-driven; no IMRAD

Feature	STEM	Social Sciences	Humanities
		flexible	
Citation Style	Numbered (Vancouver, IEEE)	Author-date (APA, Chicago)	Footnotes (Chicago, MLA, Bluebook)
Article Length	3,000–6,000 words	6,000–10,000 words	8,000–15,000+ words
Authorship	Multi-author (2–20+)	Multi-author (2–6)	Single-author norm
Voice	Shifting from passive to active	Active encouraged (APA)	First person standard
Valued Output	Journal articles	Journal articles	Books & monographs
Review Timeline	3–6 months	3–12 months	6–18+ months

13.2 Quantitative vs. qualitative vs. mixed methods

Quality criteria differ fundamentally. Quantitative research uses internal validity, external validity, reliability, and objectivity. Qualitative research uses the parallel criteria of **credibility** (triangulation, member checks), **transferability** (thick description), **dependability** (audit trail), and **confirmability** (reflexivity). Mixed methods require separate reporting of each strand plus an integration section showing how quantitative and qualitative findings connect.

13.3 Discipline-specific standards

Medical/Clinical (ICMJE + AMA): Structured abstracts ≤250 words; CONSORT compliance; trial registration numbers; all adverse events reported; serial comma required. **Psychology (APA 7th):** Bias-free language; singular "they" endorsed; 5 levels of heading formatting; specific subsections (Participants, Measures, Procedure, Data Analysis). **Engineering/CS (IEEE):** Conference papers prestigious (15–25% acceptance at top venues); two-column format; 8-page conference limits; square bracket citations. **Chemistry (ACS):** Combined Results and Discussion common; extensive nomenclature conventions; CASSI journal abbreviations. **Physics:** arXiv preprint culture; REVTeX LaTeX class; equations numbered and central to argumentation. **Economics:** JEL classification codes; NBER working papers; AEA RCT Registry; roman numeral sections; abstracts ≤150 words. **Law:** Bluebook citations; all citations in footnotes; law review articles 20,000–40,000+ words.

13.4 AI/ML paper conventions

NeurIPS/ICML format: **8-page main body** + unlimited references + appendices in LaTeX. Double-blind review with author anonymization. Required elements include error bars/CIs for experiments, broader impact statement, reproducibility details (code, data, hyperparameters), and LLM usage declaration. **Conference >**

journal culture in CS/ML — top conferences are as prestigious as top journals. arXiv preprints are universal, posted before submission. Lay summaries now required for accepted papers at major venues.

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14. Common rejection reasons and how to avoid them

14.1 Desk rejection causes (ordered by prevalence)

Desk rejection rates range from **30% (field journals) to 90%+ (Nature, Science, Cell)**. The Lancet receives 800–1,000 submissions monthly and publishes 40–50.

1. **Out of scope** (~30% of rejections) — the single most common cause. Always read Aims & Scope before submitting.
2. **Insufficient novelty** — doesn't move the conversation forward; merely applies established methods to new contexts without original contribution.
3. **Poor writing quality** — incomplete titles, unclear abstracts, grammatical errors, poorly labeled figures.
4. **Methodological weakness** — flawed design, inappropriate methods, poor statistical approach.
5. **Formatting violations** — missing sections, incorrect referencing, exceeding limits, missing ethics statements.
6. **Ethical concerns** — plagiarism detected, missing ethics approval, undisclosed COI.
7. **Incomplete submission** — missing cover letter, declarations, supplementary materials.

14.2 Common reviewer criticisms

The most frequent: (1) Weak methodology / inappropriate study design. (2) Overclaiming beyond data. (3) Insufficient sample size. (4) Poor statistical analysis. (5) Missing controls. (6) Lack of novelty. (7) Poor/outdated literature review. (8) Unclear writing.

14.3 Red flags editors screen for

Plagiarism: High similarity scores from iThenticate/Turnitin/CrossRef Similarity Check; inconsistent writing styles within a manuscript. **Image manipulation:** ~3.8% of biomedical papers contain inappropriate duplications; tools include Proofig AI, ImageJ, Forensically. **Data fabrication:** Results "too perfect," no variability, inability to provide raw data, statistical patterns inconsistent with genuine data. **P-hacking indicators:** Selective outcome reporting, post-hoc hypothesizing (HARKing), p-values clustered just below 0.05, undisclosed multiple comparisons, outcome switching between registration and publication. **Salami slicing:** Multiple papers from the same dataset without cross-referencing. **Authorship issues:** Ghost authorship, gift authorship, suspicious author list changes between versions.

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15. Technical formatting

15.1 Manuscript file structure (standard order)

1. Title page (title, authors, affiliations, corresponding author)
2. Abstract/Summary
3. Keywords
4. Main text (Introduction → Methods → Results → Discussion, or field-appropriate order)
5. Acknowledgments
6. Author contributions (CRediT)
7. Competing interests declaration
8. Data/code availability statements
9. References
10. Tables (with titles/footnotes)
11. Figure legends
12. Figures (or separate files)
13. Supplementary information legends

15.2 Formatting specifications

Font: 12pt Times New Roman (body); Arial/Helvetica for figures. **Spacing:** Double-spaced for review; **continuous line numbering** required during review (Word: Layout → Line Numbers → Continuous; LaTeX: `\usepackage{lineno}` + `\linenumbers`). **Margins:** 1 inch / 2.54 cm all sides. **File format:** Word (.docx) preferred by most journals; LaTeX accepted at acceptance stage by Nature; PDF for review when using LaTeX.

Word/page limits: Nature 6-page = ~2,500 words + 4 display items; Nature 8-page = ~4,300 words + 5–6 items; Science Research Article = ~6,000 words; PLOS ONE = no limit; Physical Review Letters = 4 pages strict.

15.3 Anonymization for blind review

Remove author names, affiliations, and identifying running headers. Replace self-citations with "Author (Year)" or use third person. Remove or mask acknowledgments, funding grants, and IRB/university names. **Scrub file metadata** (Word: File → Info → Check for Issues → Inspect Document → remove Author, Company, Last Saved By). Anonymize preregistration links and contributor lists.

15.4 Supplementary materials

Follow journal naming conventions (e.g., PLOS: "S1 Table," "S2 Figure," "S1 Appendix"). File names must match captions ("S1_Table.xls"). Place captions at end of manuscript, not in separate files. Supplementary

materials are published as provided and not copyedited. Nature permits up to 10 Extended Data items. Science limits supplementary files to 50 MB total.

Appendix A: Universal pre-submission checklist

Structure & Content

- ☐ Title ≤15 words, includes primary keywords, no abbreviations
- ☐ Abstract matches journal format (structured/unstructured), within word limit, contains all five moves
- ☐ Keywords (3–8) aligned with MeSH/controlled vocabularies, not duplicating title words
- ☐ Introduction follows CARS model: Territory → Niche → Occupation
- ☐ Methods sufficiently detailed for replication; appropriate reporting guideline followed
- ☐ Results include effect sizes, CIs, exact p-values; negative results reported fully
- ☐ Discussion follows inverted pyramid; no overclaiming; limitations acknowledged constructively
- ☐ Conclusions synthesize (not merely summarize); include future directions

Statistical Rigor

- ☐ Exact p-values reported (not just < .05)
- ☐ Effect sizes with confidence intervals for all primary analyses
- ☐ A priori power analysis with justification in Methods
- ☐ Multiple testing correction applied and described when needed
- ☐ Statistical tests appropriate for data type and study design
- ☐ Non-significant results reported with same detail as significant ones

Ethics & Transparency

- ☐ IRB/ethics approval number and date in Methods
- ☐ Informed consent documented or waiver justified
- ☐ All COI disclosed via ICMJE form or journal equivalent
- ☐ Funding statement with grant numbers, funder roles, and restrictions
- ☐ CRediT author contributions assigned for all 14 applicable roles
- ☐ Data availability statement with repository DOIs
- ☐ Code deposited in DOI-minting repository (Zenodo)
- ☐ Preregistration linked and deviations reported (if applicable)
- ☐ Clinical trial registered before first participant enrolled

AI Disclosure

- ☐ All AI tools identified (name, version, purpose)
- ☐ Disclosure placed per journal policy (Methods, Acknowledgments, or dedicated section)

- [ ] No AI-generated images (unless part of research methods with full disclosure)
- [ ] All AI output reviewed for accuracy, bias, and hallucinated references
- [ ] Prompts documented (required by Science/AAAS)

Figures & Tables

- [ ] Resolution ≥300 DPI (photos), ≥600 DPI (line art)
- [ ] Colorblind-safe palette (Okabe-Ito or viridis); no red-green
- [ ] Error bars defined in caption (SD/SEM/95% CI)
- [ ] Sample sizes (n) per group stated
- [ ] Individual data points shown where appropriate
- [ ] Self-contained captions with title + description + abbreviations
- [ ] No 3D effects, chartjunk, or truncated y-axes

Citations & References

- [ ] Style matches target journal (APA/Vancouver/IEEE/Chicago)
- [ ] DOIs included as https://doi.org/...
- [ ] 30–50% of references within past 5 years
- [ ] Self-citations <15–20%
- [ ] Preprints labeled [Preprint]; retracted papers noted [Retracted]
- [ ] AI tools cited per APA 7th with usage described in Methods
- [ ] All in-text citations match reference list entries

Technical Formatting

- [ ] Continuous line numbers and page numbers included
- [ ] Double-spaced, 12pt standard font, 1-inch margins
- [ ] Sections in correct order per journal guidelines
- [ ] Supplementary materials named per convention
- [ ] File metadata scrubbed for blind review
- [ ] Self-citations anonymized for blind review
- [ ] Word/page count within journal limits
- [ ] Cover letter tailored to specific journal, ≤1 page, all declarations included

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Appendix B: Response to reviewers template

Manuscript ID: [XXX-XXXX]
Title: "[Full Title]"

Dear [Editor Name],

Thank you for the opportunity to revise our manuscript. We are grateful for the reviewers' insightful comments, which have substantially strengthened the work.

SUMMARY OF MAJOR REVISIONS:
1. [Major change 1]
2. [Major change 2]
3. [Major change 3]

Changes are highlighted in [blue/tracked changes] in the revised manuscript. Below is our point-by-point response. Reviewer comments appear in bold; our responses in regular text; new manuscript text in blue italic.

REVIEWER 1

R1.1: "[Exact reviewer comment]"

Response: [Direct answer first]. [Detailed explanation with evidence]. The revised text now reads (p. X, lines Y–Z): "[New text in italics]"

R1.2: "[Exact reviewer comment]"

Response: Thank you for this suggestion. [Response]. Changed on page X.

REVIEWER 2
[Continue same format]

We believe these revisions address all concerns raised. We hope the revised manuscript is suitable for publication in [Journal Name].

Sincerely,
[Corresponding Author]

This UMA guide synthesizes current standards from ICMJE (January 2025), EQUATOR Network, APA 7th Edition, AMA 11th Edition, CONSORT 2025, PRISMA 2020, Nature/Science/PLOS editorial policies, COPE guidelines, ASA statistical statements, BARG (Nature Human Behaviour, 2021), CRediT (ANSI/NISO

Z39.104-2022), FAIR data principles, FORCE11 software citation principles, and current AI policies from all major publishers (Nature, Science, Elsevier, Wiley, Springer, IEEE, Taylor & Francis, SAGE). It is designed to serve as the sole authoritative reference for SAGE's manuscript analysis across all disciplines, study types, and publication stages.