**Artificial Intelligence Review Committee (AIRC)**

**Analytic/Non-Human Subjects - Enhanced Rubric**

Version: 2.0 (December 2025)

Use this rubric for complex, high-impact de-identified data analytics or "not human subjects research" projects that use novel AI methods with potential for significant societal impact.

Administrative Information

| **Field** | **Information** |
| --- | --- |
| Protocol Number | [blank line] |
| Principal Investigator | [blank line] |
| Project Title | [blank line] |
| Date of Review | [blank line] |
| AIRC Reviewer(s) | [blank line] |
| AI Tool/Model Name and Version | [blank line] |
| Intended Use/Application Context | [blank line] |
| Data Source(s) | [blank line] |
| Project Type | ☐ De-identified Data ☐ Anonymous Survey ☐ Other |
| Risk Level | ☐ High Impact ☐ Novel Algorithm ☐ Population-Level Analysis |

**Instructions for Reviewers**

* Complete all applicable domains using 1-4 scale
* Use N/A with justification if item does not apply
* Select "Insufficient Documentation" if unable to score
* Critical Rule: Score of 1 in any domain = "Not Acceptable"

**Domain 1: Data Provenance & Quality**

Purpose: Ensure data sources are appropriate, well-documented, and of sufficient quality.

Checklist Items

1.1 Are data sources clearly documented (origin, collection methods, dates)?

1.2 Is data quality adequate for the intended analysis?

1.3 Are data cleaning, preprocessing, and missing value handling documented?

1.4 Are inclusion/exclusion criteria appropriate and clearly defined?

1.5 Is there evidence data are representative of the target population?

Scoring Criteria

| **Score** | **Description** |
| --- | --- |
| 4 - Exemplary | Complete provenance with detailed lineage, formal quality assessment with validation metrics, robust preprocessing pipeline fully documented, clear inclusion/exclusion with justification, representativeness analysis with statistical validation |
| 3 - Proficient | Data sources clearly identified, quality appropriate for analysis, preprocessing documented, inclusion/exclusion defined, basic representativeness assessment |
| 2 - Basic | Data sources identified with limited detail, quality acceptable but not validated, basic preprocessing mentioned, vague criteria, limited representativeness |
| 1 - Deficient | Sources unclear or undocumented, poor data quality, no preprocessing documentation, no inclusion/exclusion criteria, no representativeness assessment |

Reviewer Assessment

| **Item** | **Rating** | **Comments** |
| --- | --- | --- |
| Domain 1 Score (1-4) | [blank] | [blank area for detailed comments] |
| ☐ N/A - Justification: |  |  |
| ☐ Insufficient Documentation |  |  |

**Domain 2: Privacy/Re-identification Risk**

Purpose: Ensure data are appropriately de-identified and re-identification risk is minimized.

Checklist Items

2.1 Are data truly de-identified per applicable standards?

2.2 Has re-identification risk been formally assessed?

2.3 Are there safeguards to prevent re-identification during analysis?

2.4 Are data security measures adequate?

2.5 Is there a data management plan including retention and destruction?

Scoring Criteria

| **Score** | **Description** |
| --- | --- |
| 4 - Exemplary | Expert determination or equivalent validation, comprehensive re-identification risk analysis with quantitative metrics, multiple safeguards throughout data lifecycle, enterprise-grade security, detailed data management with compliance verification |
| 3 - Proficient | Formal de-identification process documented, re-identification risk considered, appropriate safeguards in place, security meeting institutional standards, data management plan documented |
| 2 - Basic | Basic de-identification claimed but not validated, limited risk assessment, minimal safeguards, basic security, vague data management |
| 1 - Deficient | De-identification questionable or inadequate, no risk assessment, no safeguards, poor security, no data management plan |

Reviewer Assessment

| **Item** | **Rating** | **Comments** |
| --- | --- | --- |
| Domain 2 Score (1-4) | [blank] | [blank area for detailed comments] |
| ☐ N/A - Justification: |  |  |
| ☐ Insufficient Documentation |  |  |

**Domain 3: Analytic Validity/Methodology**

Purpose: Ensure AI/analytic methods are scientifically sound and appropriate.

Checklist Items

3.1 Is the AI/analytic approach appropriate for the research question?

3.2 Are model performance metrics relevant and adequately validated?

3.3 Is there evidence of appropriate model selection and validation?

3.4 Are statistical methods and assumptions clearly documented?

3.5 Are limitations of the analytic approach acknowledged?

Scoring Criteria

| **Score** | **Description** |
| --- | --- |
| 4 - Exemplary | AI approach optimally suited to question with detailed justification, performance metrics exceed standards with external validation, robust validation including cross-validation and sensitivity analysis, statistical methods thoroughly documented, comprehensive limitations with mitigation |
| 3 - Proficient | AI approach appropriate and justified, performance metrics adequate, validation procedures documented, statistical methods clear, key limitations acknowledged |
| 2 - Basic | AI approach acceptable but limited justification, basic performance metrics, minimal validation, statistical methods vaguely described, limited limitations |
| 1 - Deficient | AI approach unsuitable, missing or inadequate metrics, no validation, statistical methods unclear or inappropriate, no limitations discussion |

Reviewer Assessment

| **Item** | **Rating** | **Comments** |
| --- | --- | --- |
| Domain 3 Score (1-4) | [blank] | [blank area for detailed comments] |
| ☐ N/A - Justification: |  |  |
| ☐ Insufficient Documentation |  |  |

**Domain 4: Transparency/Reproducibility**

Purpose: Ensure methods are transparent and results can be reproduced.

Checklist Items

4.1 Is the AI algorithm, version, and rationale clearly documented?

4.2 Are methods described in sufficient detail to enable reproduction?

4.3 Is there a plan for code/algorithm sharing or availability?

4.4 Are version control and change management procedures in place?

4.5 Is there documentation of all analysis decisions and parameter choices?

Scoring Criteria

| **Score** | **Description** |
| --- | --- |
| 4 - Exemplary | Algorithm fully specified with public repository or detailed documentation, comprehensive methods enabling exact replication, code publicly available or accessible upon request, formal version control with change logs, all analysis decisions documented with justifications. |
| 3 - Proficient | Algorithm and version documented with rationale, methods sufficiently detailed for replication, code availability plan specified, version tracking in place, and major analysis decisions documented. |
| 2 - Basic | Algorithm identified with limited detail, method descriptions incomplete, vague code availability, minimal version control, and limited analysis decision documentation |
| 1 - Deficient | Algorithm unclear, methods inadequate for replication, no code availability, no version control, and analysis decisions undocumented. |

Reviewer Assessment

| **Item** | **Rating** | **Comments** |
| --- | --- | --- |
| Domain 4 Score (1-4) | [blank] | [blank area for detailed comments] |
| ☐ N/A - Justification: |  |  |
| ☐ Insufficient Documentation |  |  |

**Domain 5: Group Harms/Societal Risk**

Purpose: Assess potential for group-level harms or societal impacts from AI analytics.

Checklist Items

5.1 Have potential group-level or societal harms been identified and assessed?

5.2 Could results perpetuate bias, discrimination, or stigmatization?

5.3 Are there plans to mitigate identified group harms?

5.4 Has consideration been given to how results might be used or misused?

5.5 Are dissemination plans appropriate and responsible?

Scoring Criteria

| **Score** | **Description** |
| --- | --- |
| 4 - Exemplary | Detailed analysis of potential group-level impacts across multiple dimensions, thorough bias and discrimination assessment, proactive mitigation strategies with monitoring, careful consideration of use/misuse scenarios, and a responsible dissemination plan with safeguards |
| 3 - Proficient | Major group harms identified and assessed, bias considerations documented, mitigation strategies in place, use/misuse scenarios considered, and an appropriate dissemination plan |
| 2 - Basic | Some group risks mentioned, minimal bias consideration, vague mitigation, limited use/misuse consideration, basic dissemination plan |
| 1 - Deficient | No consideration of group impacts, no bias assessment, no mitigation plans, no use/misuse consideration, inappropriate or irresponsible dissemination plan |

Reviewer Assessment

| **Item** | **Rating** | **Comments** |
| --- | --- | --- |
| Domain 5 Score (1-4) | [blank] | [blank area for detailed comments] |
| ☐ N/A - Justification: |  |  |
| ☐ Insufficient Documentation |  |  |

**Final Score Calculation and Recommendation**

**Score Summary**

| **Domain** | **Score (1-4)** |
| --- | --- |
| Domain 1: Data Provenance & Quality | [blank] |
| Domain 2: Privacy/Re-identification Risk | [blank] |
| Domain 3: Analytic Validity/Methodology | [blank] |
| Domain 4: Transparency/Reproducibility | [blank] |
| Domain 5: Group Harms/Societal Risk | [blank] |
| Total Score (Range: 5-20) | [blank] |

**Critical Deficiency Rule**

| **Check if applicable** |  |
| --- | --- |
| ☐ One or more domains scored 1 | *(If checked, Final Recommendation MUST be "NOT ACCEPTABLE")* |

**Final Recommendation**

Select One:

☐ ACCEPTABLE - Forward with approval recommendation

☐ MODIFICATIONS REQUIRED - Return to submitter with feedback below

☐ NOT ACCEPTABLE - Reject; major revision required

Required Modifications (if applicable):

1. [blank line]
2. [blank line]
3. [blank line]

**Overall Summary**

Strengths:

[Large blank area]

Concerns:

[Large blank area]

Additional Comments:

[Large blank area]

Signatures

| **Role** | **Signature** | **Date** |
| --- | --- | --- |
| Reviewer | [blank line] | [blank line] |
| AIRC Chair/Designee | [blank line] | [blank line] |