GrantPanel

SAMPLE REPORT · DOD

GrantPanel DoD CDMRP Review

with Recommended Revisions

Two-tier review in the CDMRP style: a scientific peer panel scoring merit, innovation, feasibility, and impact (with a consumer advocate at the table), followed by a programmatic panel weighing portfolio fit and mechanism intent, with three rounds of discussion and a funding recommendation, all generated by GrantPanel's AI review panel.

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APPLICATION TITLE

A Blood-Based Biomarker Panel for Blast-Induced Mild Traumatic Brain Injury

PRINCIPAL INVESTIGATOR

Dr. Marcus Bell

INSTITUTION

Coastal Health Sciences University

PROGRAM & MECHANISM

CDMRP · PRMRP — Investigator-Initiated Research Award

REQUESTED AMOUNT

$1,100,000

PERIOD OF PERFORMANCE

3 years

PANEL CONSENSUS

Recommend for funding

PROGRAMMATIC PRIORITY

(2018) established GFAP/UCH-L1 for CT-negative triage — the clinical anchor for the core panel.

Tier 1 — Scientific peer review consensus. The application proposes a multiplexed blood-based biomarker panel to diagnose blast-induced mild TBI, where standard imaging is typically normal. The scientific peers judged the core panel to be of outstanding-to-excellent merit with credible feasibility, and the consumer advocate judged the potential impact on service members to be high. The exploratory-marker aim was the panel's shared reservation.

FIX IN THIS ORDER

four of the panel's findings — the full list is below

01 **SOW milestones not all measurable.** →

Give the two deliverables quantitative success criteria.

02 **Military relevance underdeveloped.** →

Develop the FY topic-area alignment (blast mTBI diagnostics) in the narrative, not just the abstract.

03 **Impact statement conflates horizons.** →

Separate near-term (assay validation) from long-term (fieldable test) impact.

04 **Biospecimen consent unaddressed.** →

Address the military cohort's consent constraints in the sharing plan.

This is the short list. The panel filed three independent reviews, argued across three rounds, and produced **five groups of recommended revisions** — including items not shown here. Each finding is tied to the section it came from, so you can check the claim against your own document.

Contents

DOCUMENT INTELLIGENCE

Document Intelligence

Proposal package inventory

READY WITH QUESTIONS

Detected documents:

- Technical Abstract and Lay Abstract (1 page each)
- Project Narrative (pages 3–14)
- Statement of Work (2 pages)
- Impact statement, Budget Justification, and Biosketches are present in the supporting package.

Conditional requirements:

- Human Subjects Protection: applicable and present. The cohort design requires it, and the package includes the protection plan.
- Military relevance statement: present, addressing the PRMRP topic area named in the funding opportunity.
- Data and research resources sharing plan: unclear. Biomarker data sharing is asserted in the Narrative but no plan document was identified.

Document quality: No document quality issues detected.

Author questions: Is a standalone data sharing plan attached? The panel could not verify the sharing commitments made in the Narrative.

COMPLIANCE & MECHANISM FIT

Compliance

CDMRP mechanism & format check

COMPLETED

Status: Compliant with concerns

Issues found:

- The Statement of Work milestones are not all measurable — two deliverables lack quantitative success criteria the panel can assess.
- Military relevance is asserted but the FY topic-area alignment (blast mTBI diagnostics) is stated only in the abstract, not developed in the narrative.
- The Impact statement does not distinguish near-term (assay validation) from long-term (field-deployable test) impact, which the mechanism asks applicants to separate.
- Human subjects: the biospecimen sharing plan does not address the military cohort's consent constraints.

Notes: Page limits and required attachments (SOW, Impact, biosketches) are otherwise present.

Topic-Area Alignment

Fit to the FY topic & mechanism intent

COMPLETED

Alignment: Strong

Addressed well:

- Squarely addresses a named FY topic area — diagnosis of blast-induced mild TBI — with clear military relevance to deployed and post-deployment populations.
- The investigator-initiated mechanism rewards innovation and impact; the biomarker-panel concept fits that intent.
- Consumer/stakeholder relevance (service members, veterans) is explicit and credible.

Gaps:

- The path from a validated assay to a fieldable diagnostic is not sketched, weakening the long-term impact case.

- Overlap with an ongoing VA biomarker effort is not addressed; the programmatic panel will want that distinction.

TIER 1 — SCIENTIFIC PEER REVIEW

Reviewer A

Scientific peer — merit & feasibility

COMPLETED

RATING — Outstanding — MERIT 1.6 · 1 = BEST

Scientific merit.

- The multiplexed panel (GFAP, UCH-L1, neurofilament light, plus two exploratory markers) is well grounded in blast-injury biology.
- Preliminary ROC data on a pilot cohort are genuinely strong for this stage.

Feasibility.

- Assay development plan is realistic; the clinical cohort is already partially enrolled through an existing military-medical partnership.
- Risk: the exploratory markers rest on a single prior report.

Innovation / impact. A validated multiplex would meaningfully change triage for blast mTBI, where CT is typically normal.

Overall. Outstanding merit with credible feasibility.

Reviewer B

Scientific peer — innovation & impact

COMPLETED

RATING — Excellent — MERIT 2.3 · 1 = BEST

Innovation.

- The combination is innovative for the blast-specific context, though each individual marker is established in civilian TBI.

Scientific merit / feasibility.

- Central concern: no pre-registered analysis plan or locked cut-points — the panel cannot tell how "diagnostic performance" will be judged before the data are seen.
- The exploratory-marker aim is under-powered and could dilute the strong core panel.

Impact. Real, but the leap from assay to deployable field test is asserted, not planned.

Overall. Excellent core with an over-scoped exploratory aim.

Consumer Reviewer

Consumer advocate — impact on service members

COMPLETED

RATING — High impact — IMPACT 3 OF 4

Consumer perspective. As an advocate for service members living with the consequences of undiagnosed blast injury, I read this application for whether it would change lives, not only advance science.

- **Meaningful impact:** a fast blood test would address a real, lived problem — blast mTBI that current imaging misses — and could reduce the long diagnostic odyssey many veterans describe.
- **Community relevance:** the enrolled cohort reflects the affected population; the PI engaged a veteran advisory group, which is evident and valued.
- **Concern:** the application stops at assay validation. The advocacy community cares most about a test that reaches a field medic or a VA clinic — the long-term impact and dissemination path should be stated.

Overall. High potential impact on the affected community; strengthen the translation-to-practice narrative.

PANEL DISCUSSION

ROUND 1 — POSITIONS

A

REVIEWER A

Outstanding merit for me — the core panel biology is sound and the pilot ROC data are strong. My only real risk is the exploratory markers.

B

REVIEWER B

Excellent, not outstanding. Without pre-registered cut-points I can't tell how success will be judged, and the exploratory aim is under-powered.

C

REVIEWER C

From the consumer side this is high impact — it targets a problem veterans live with. My concern is that it stops at validation and never reaches a clinic.

ROUND 2 — DISCUSSION

A

REVIEWER A

Reviewer B, I take the pre-registration point — that's a fixable revision, not a merit flaw. The core aim would still stand on its own.

B

REVIEWER B

Agreed it's fixable. If the exploratory aim were cut or moved to secondary, my score would rise. The core panel is genuinely strong.

C

REVIEWER C

And a dissemination plan — even a paragraph on the path to a field test — would address both the impact gap and Reviewer B's translation concern at once.

ROUND 3 — FINAL POSITIONS

A

REVIEWER A

Final: Outstanding. Strong merit and feasibility; recommend the exploratory aim be de-scoped.

B

REVIEWER B

Final: Excellent. Pre-registration and a tightened scope would move this to outstanding.

C

REVIEWER C

Final: High impact. Add the translation-to-practice path; the community need is real and well matched.

TIER 2 — PROGRAMMATIC RECOMMENDATION

Programmatic Panel Summary

Recommend for funding

PROGRAMMATIC PRIORITY

Tier 1 — Scientific peer review consensus. The application proposes a multiplexed blood-based biomarker panel to diagnose blast-induced mild TBI, where standard imaging is typically normal. The scientific peers judged the core panel to be of outstanding-to-excellent merit with credible feasibility, and the consumer advocate judged the potential impact on service members to be high. The exploratory-marker aim was the panel's shared reservation.

Scientific merit & feasibility — consensus.

- Strong biological rationale and unusually mature pilot ROC data for this stage.
- Clinical cohort partially enrolled through an existing military-medical partnership.
- Consensus weaknesses: no pre-registered analysis plan or locked cut-points; the exploratory aim is under-powered and over-scoped.

Innovation & impact — consensus.

- Innovative in the blast-specific context; a validated test would change triage for a population current diagnostics miss.
- The path from assay validation to a fieldable diagnostic is asserted but not planned — both the scientific and consumer reviewers flagged this.

Consumer perspective. The affected-community need is real and the cohort reflects it; the advocate emphasized dissemination to field and VA settings.

Points of disagreement. Merit scoring split between Outstanding and Excellent over the pre-registration gap; the reviewers converged on treating it as a fixable revision rather than a merit deficiency.

Tier 2 — Programmatic recommendation. Weighing scientific merit against the program's portfolio, mechanism intent (investigator-initiated, impact-driven), and topic-area relevance (blast mTBI diagnostics), the programmatic panel recommends this application **for funding**, contingent on: (1) a pre-registered analysis plan with locked diagnostic cut-points; (2) de-scoping or making secondary the exploratory-marker aim; (3) a stated dissemination path toward a field-deployable test; and (4) a clarified distinction from the ongoing VA biomarker effort. Programmatic relevance and portfolio fit are strong.

RECOMMENDED REVISIONS

Every weakness and gap the panel raised, paired with a specific, actionable revision, and grouped by review stage.
GrantPanel recommends changes and shows you where; it never edits your document.

Revisions by section

Ordered by what to fix first

5 REVISIONS

01 Compliance & mechanism fit

FIX BEFORE SUBMISSION

- → **SOW milestones not all measurable.** Give the two deliverables quantitative success criteria.
- → **Military relevance underdeveloped.** Develop the FY topic-area alignment (blast mTBI diagnostics) in the narrative, not just the abstract.
- → **Impact statement conflates horizons.** Separate near-term (assay validation) from long-term (fieldable test) impact.
- → **Biospecimen consent unaddressed.** Address the military cohort's consent constraints in the sharing plan.

02 Topic-area alignment

MEET MECHANISM INTENT

- → **No path to a fieldable test.** Sketch the route from a validated assay to a field-deployable diagnostic.
- → **VA overlap not addressed.** Distinguish the work from the ongoing VA biomarker effort.

03 Tier 1 — scientific peer review

STRENGTHEN THE SCIENCE

- → **No pre-registered analysis plan.** Add a pre-registered plan with locked diagnostic cut-points.
- → **Exploratory-marker aim over-scoped.** De-scope or make secondary the under-powered exploratory aim so it does not dilute the strong core panel.
- → **Time-since-injury effect uncontrolled.** Control for time since injury in the diagnostic-performance analysis.

04 Consumer & programmatic

ADDRESS FIRST

- → **Dissemination to practice.** State the path to a field medic or VA clinic — the impact the consumer advocate weighted most.
- → **Portfolio distinction.** Make the distinction from the VA effort explicit for the programmatic panel.

05 Prior work & citations

POSITION THE CONTRIBUTION

- → **Two directly relevant works under-cited.** Engage the 2021 military-cohort study on time-since-injury effects and recent point-of-care platform validations.

SUPPORTING RESEARCH

REFERENCES LOOKUP

References

Extracts and looks up cited prior work

COMPLETED

Extracting cited references from the application...

Found 6 references. Fetching abstracts from Semantic Scholar...

[1/6] GFAP and UCH-L1 for acute TBI detection — found [2/6] Neurofilament light as a neuronal injury marker — found [3/6] Blast neurotrauma pathophysiology — found [4/6] Blood biomarkers in military mTBI cohorts — found [5/6] Field-deployable point-of-care immunoassays — no match [6/6] Pre-registration and diagnostic accuracy studies — found

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The application cites 6 references. Abstracts (where available) are provided below.

[1] GFAP and UCH-L1 for acute TBI detection *(2018)* — Bazarian et al. *Lancet Neurology · 2018* A multicenter trial validating a combined GFAP/UCH-L1 assay to rule out intracranial injury on CT, later cleared for clinical use.

[2] Neurofilament light as a neuronal injury marker *(2019)* — Shahim et al. *Neurology · 2019* Serum neurofilament light tracks axonal injury severity and recovery trajectory across TBI populations.

[3] Blast neurotrauma pathophysiology *(2017)* — Rosenfeld et al. *Lancet Neurology · 2017* Reviews the distinct biomechanics and pathology of blast versus impact TBI, motivating blast-specific diagnostics.

[4] Blood biomarkers in military mTBI cohorts *(2021)* — Gill et al. *JAMA Neurology · 2021* Reports biomarker elevations in deployed service members with blast exposure, with performance varying by time since injury.

[5] Field-deployable point-of-care immunoassays *(Not found on Semantic Scholar.)*

[6] Pre-registration and diagnostic accuracy studies *(2020)* — Korevaar et al. *BMJ · 2020* Argues that pre-registered analysis plans and locked thresholds reduce optimistic bias in diagnostic-accuracy research.

LITERATURE REVIEW (DEEP RESEARCH)

Literature Review

Deep-research SOTA scan

COMPLETED

Research area & central claim. The application claims a multiplexed blood panel can diagnose blast-induced mild TBI where CT is normal, with military-relevant field utility. The panel's deep search assessed both the diagnostic-performance claim and the field-deployment claim.

State of the art (last 3–5 years)

- Bazarian et al. (2018) established GFAP/UCH-L1 for CT-negative triage — the clinical anchor for the core panel.
- Military-cohort biomarker studies (Gill et al., 2021) show time-since-injury strongly affects performance — a design factor the application must control.
- Neurofilament light (Shahim 2019) adds axonal-injury specificity but is not blast-specific.
- Point-of-care immunoassay platforms have matured, but peer-reviewed field-deployment evidence for blast mTBI remains thin.

Competing approaches

- **Advanced neuroimaging (DTI)** — sensitive but not deployable; complementary rather than competing.
- **Single-marker assays** — already fielded for CT triage; the proposal's multiplex must show added value over these.
- **Ongoing VA biomarker program** — overlapping population; the distinction should be made explicit for the programmatic panel.

Open problems the application addresses

- Blast-specific diagnostic performance, controlling for time since injury.
- Whether a multiplex outperforms fielded single-marker triage — the core value proposition.

Citation gaps in the application

- The 2021 military-cohort study on time-since-injury effects — central to design, cited only briefly.
- Recent point-of-care platform validations — relevant to the field-deployment claim, not cited.

Search log

- "GFAP UCH-L1 blast mild TBI diagnostic 2024"
- "neurofilament light blast neurotrauma military"
- "blood biomarker time since injury mTBI performance"
- "point of care immunoassay field deployable TBI"
- "pre-registration diagnostic accuracy locked cutpoints"
- "VA traumatic brain injury biomarker program"

INDIVIDUAL WEB SEARCHES

Reviewer A
3 searches

1. GFAP UCH-L1 multiplex blast TBI performance
2. neurofilament light blast injury specificity
3. military cohort mTBI biomarker enrollment

Reviewer B
4 searches

1. pre-registered diagnostic accuracy locked cutpoints
2. exploratory biomarker power analysis TBI
3. multiplex vs single marker TBI triage
4. blast mTBI diagnostic added value

Consumer Reviewer
3 searches

1. veteran blast TBI diagnosis delay lived experience
2. point of care TBI test field medic VA clinic
3. service member undiagnosed concussion outcomes