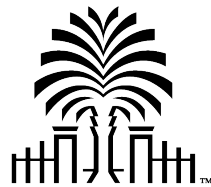


Integrating AI Across Research Development & Administration

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Learning Objectives

- Where AI is actually working in daily RD/RA workflows today (*and where it isn't*)
- Using AI for opportunity analysis and proposal strategy
- Supporting faculty from opportunity identification through submission
- Implement AI responsibly across the research enterprise



Why This Matters

- Increasing proposal and compliance complexity
- Growing administrative burden across RD, RA, and post-award teams
- Siloed workflows across the research lifecycle
- Need for faster, more consistent support for faculty

AI is a force multiplier - not a replacement



Core Concept

AI Connects the Research Lifecycle

Strategy (RD) → Submission (RA) → Management (Post-Award)

AI enables:

- Earlier alignment
- Fewer handoff gaps
- More consistent processes
- Better decision-making



AI Use Matrix

AI accelerates analysis → humans make decisions

AI Works Well (High Reliability)	AI Works with Oversight	AI Does NOT Replace
Summarizing NOFOs, awards, and policies	Identifying proposal gaps and weaknesses	Final compliance determination
Extracting requirements, deadlines, and criteria	Suggesting team composition and structure	Institutional policy interpretation
Comparing drafts to sponsor guidelines	Flagging potential compliance risks	Sponsor-specific judgment calls
Generating checklists, outlines, and templates	Drafting budget justifications or narratives	Final sign-off or submission authority



AI Across the Lifecycle

- Funding Intelligence
- Research Development
- Team Science & Coordination
- Pre-Award Support
- Submission Readiness & Compliance (RA)
- Post-Award Management & Reporting



Use Case 1: (Strategy) From Opportunity Analysis → To Proposal Strategy

AI can help RD teams:

- Assess opportunity fit with institutional strengths
- Compare sponsor priorities across programs
- Identify competitiveness signals (scope, scale, expectations)
- Generate “go / no-go” considerations



Use Case 1: (Strategy)

From Opportunity Analysis → To Proposal Strategy

Example Prompt:

“Based on this NOFO and our institutional strengths, assess strategic fit, competitiveness, and key positioning themes.”

Example Output Use:

- 1-page internal summary for faculty
- Go/no-go recommendation support
- Early positioning guidance for faculty
- More intentional proposal development



Use Case 2: Proposal Review

AI can:

- Compare draft to review criteria
- Identify gaps and weak areas
- Flag missing components
- Highlight compliance risks



Use Case 2: Proposal Review

Example Prompt:

“Evaluate this proposal against the NSF review criteria. Identify weaknesses, missing elements, and compliance concerns.”

Example Output Use:

- Internal review feedback memo
- Pre-submission checklist



Use Case 3: Team & Coordination

AI can:

- Identify collaborators
- Suggest disciplines
- Anticipate subawards
- Support coordination



Use Case 3: Team & Coordination

Example Prompt:

“Based on this project, identify required expertise, potential collaborators, and any likely subawards or external partners.”

Example Output Use:

- Team planning document
- Early identification of admin complexity



Use Case 4: Award & Financial Management

AI can:

- Summarize Notices of Award
- Extract reporting requirements
- Analyze spending patterns
- Flag risks



Use Case 4: Award & Financial Management

Example Prompt (Award Setup):

“Summarize this Notice of Award and list reporting deadlines, restrictions, and compliance requirements.”

Example Prompt (Finance):

“Analyze this budget vs. actual spending and identify burn rate risks or underspending.”

Example Output Use:

- Award setup checklist
- Monthly PI financial summary



Use Case 5: Reporting & Compliance

AI can support post-award accountants with:

- Reviewing transactions for allowability and allocability
- Identifying unallowable or questionable charges
- Monitoring effort, cost share, and budget alignment
- Tracking reporting deadlines (financial, technical, closeout)
- Flagging compliance risks before reporting or audit

Moves post-award from reactive reconciliation → proactive compliance monitoring



Use Case 6: Award & Financial Management

Example Prompt (Transaction Review):

“Review these project transactions and flag any that may be unallowable, misallocated, or inconsistent with the award terms.”

Example Prompt (Financial Reporting):

“Summarize this project’s financial activity for the reporting period, highlighting any variances from budget and potential concerns.”



Use Case 6: Award & Financial Management

Example Prompt (Compliance Check):

“Based on this award and spending data, identify any compliance risks related to allowability, effort, or cost share.”

Example Output Use:

- Pre-review before submitting financial reports
- Monthly or quarterly PI financial summaries
- Internal compliance checks before audit
- Early identification of issues (vs. end-of-project surprises)



End-to-End AI Workflow Example

Scenario: NSF Proposal

- Upload solicitation → AI summarizes requirements
- Input PI idea → AI generates structure (outline) and team suggestions
- Upload draft → AI identifies gaps
- AI generates submission checklist
- Post-award → AI tracks reporting + burn rate

Result:

- Faster turnaround
- Better coordination across RD, pre-award, and post-award
- Fewer errors



AI Enabled Faculty Support Across the Lifecycle

Stage

Opportunity Identification

Early Concept Development

Proposal Development

Pre-Submission

AI-Supported Activities

Curated, simplified funding summaries
Faster matching of ideas to opportunities

AI-assisted framing of research ideas
Suggested collaborators and disciplines

Structured outlines aligned to sponsor criteria
Gap analysis against review requirements

Checklist validation
Compliance and completeness review

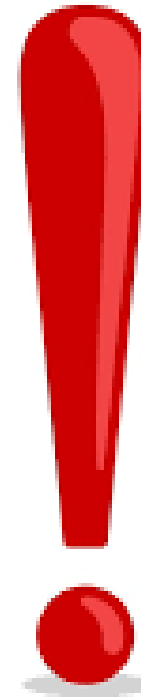


AI Enabled Faculty Support Across the Lifecycle

Impact

- Faster turnaround
- Clearer guidance
- Reduced back-and-forth

**AI enhances how we support faculty;
it does not replace it.**



Responsible AI & Implementation

Using AI Within Policy & Compliance Boundaries

- Protect confidential and sensitive data
- Follow institutional and sponsor policies
- Maintain human oversight

Start Small, Low Risk:

- Funding opportunity summaries
- Internal checklists and templates
- Draft proposal reviews (non-sensitive content)



Responsible AI & Implementation

Use with Approved Tools Only:

- Proposals with confidential or proprietary data
- Human subjects or sensitive data
- Budget and financial details

NOT Appropriate for Public AI Tools:

- Export-controlled research
- Protected or regulated data
- Final compliance review or certification



Responsible AI & Implementation

ALWAYS Required

- Human oversight
- Alignment with institutional IT/security guidance
- Awareness of sponsor requirements



Trust & Limitations

AI can:

- Miss nuance in sponsor language
- Misinterpret complex requirements
- Generate incomplete or incorrect outputs

AI cannot:

- Replace compliance judgement
- Replace institutional knowledge
- Interpret gray areas without context



Key Takeaways

1. AI connects RD, RA, and Post-Award into one lifecycle
2. Practical applications exist today across all phases
3. AI improves efficiency, consistency, and coordination
4. Responsible implementation is essential



QUESTIONS?

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