

# Office of Research: Exploring AI

SRAI Annual Meeting 2024

Andrea Anderson / Executive Director, Sponsored Projects

Carolyn Pappas / Asst. Director, Research Administration  
Systems



INFORMATION AND  
TECHNOLOGY SERVICES  
UNIVERSITY OF MICHIGAN



# Topics



- Using AI in the Awarding Process
- AI in a new CLM tool
- Exploring other options

# Using AI in the Awarding Process

- Business Need
- Evaluating Options
- Value of Partnership and Iterative Design
- Demo
- Technical Details
- Challenges and Considerations
- Future Directions



# Business Need: Manual Award Data Entry

Department of Health and Human Services  
National Institutes of Health  
NATIONAL INSTITUTE ON AGING

Notice of Award  
FAIN# DP2AG093207  
Federal Award Date  
09/10/2024

| Recipient Information   | Federal Award Information  |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
|---|--|---|--|---|--|---|-------------|--------------------------|-----------|----------------------------|-----------|---------------------------------|--|-------------------|--|---|-------------|--|-----|--|-------------|--|--|--|-------------|
| <b>1. Recipient Name</b><br>REGENTS OF THE UNIVERSITY OF MICHIGAN<br>1109 GEDDES AVE, SUITE 3300<br>ANN ARBOR, MI 48109   | <b>11. Award Number</b><br>1DP2AG093207-01   |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
| <b>2. Congressional District of Recipient</b><br>06   | <b>12. Unique Federal Award Identification Number (FAIN)</b><br>DP2AG093207  |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
| <b>3. Payment System Identifier (ID)</b><br>1386000309A1  | <b>13. Statutory Authority</b><br>42 USC 241 42 CFR 52   |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
| <b>4. Employer Identification Number (EIN)</b><br>386005309   | <b>14. Federal Award Project Title</b><br>Turning back biological clock: mechanisms of age reversal in a whole organism  |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
| <b>5. Data Universal Numbering System (DUNS)</b><br>073133571   | <b>15. Assistance Listing Number</b><br>93 866   |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
| <b>6. Recipient's Unique Entity Identifier</b><br>GNL788P73WES  | <b>16. Assistance Listing Program Title</b><br>Aging Research  |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
| <b>7. Project Director or Principal Investigator</b><br>Longhua Guo, PhD<br><br>longhua@umich.edu<br>734-615-0498   | <b>17. Award Action Type</b><br>New Competing  |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
| <b>8. Authorized Official</b><br>Lizzie Howard  | <b>18. Is the Award R&amp;D?</b><br>Yes  |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |
| <b>Federal Agency Information</b><br><b>9. Awarding Agency Contact Information</b><br>JERMAIN Cooper<br><br>NATIONAL INSTITUTE ON AGING<br>jermain.cooper@nih.gov<br>301-456-1472 | <table border="1"><thead><tr><th colspan="2">Summary Federal Award Financial Information</th></tr></thead><tbody><tr><td><b>19. Budget Period Start Date (9/15/2024 – End Date 08/31/2027)</b></td><td></td></tr><tr><td><b>20. Total Amount of Federal Funds Obligated by this Action</b></td><td>\$1,404,000</td></tr><tr><td>    20 a. Direct Cost Amount</td><td>\$900,000</td></tr><tr><td>    20 b. Indirect Cost Amount</td><td>\$504,000</td></tr><tr><td><b>21. Authorized Carryover</b></td><td></td></tr><tr><td><b>22. Offset</b></td><td></td></tr><tr><td><b>23. Total Amount of Federal Funds Obligated this budget period</b></td><td>\$1,404,000</td></tr><tr><td><b>24. Total Approved Cost Sharing or Matching, where applicable</b></td><td>\$0</td></tr><tr><td><b>25. Total Federal and Non-Federal Approved this Budget Period</b></td><td>\$1,404,000</td></tr><tr><td><b>26. Project Period Start Date (9/15/2024 – End Date 08/31/2027)</b></td><td></td></tr><tr><td><b>27. Total Amount of the Federal Award including Approved Cost Sharing or Matching this Project Period</b></td><td>\$1,404,000</td></tr></tbody></table> | Summary Federal Award Financial Information |  | <b>19. Budget Period Start Date (9/15/2024 – End Date 08/31/2027)</b> |  | <b>20. Total Amount of Federal Funds Obligated by this Action</b> | \$1,404,000 | 20 a. Direct Cost Amount | \$900,000 | 20 b. Indirect Cost Amount | \$504,000 | <b>21. Authorized Carryover</b> |  | <b>22. Offset</b> |  | <b>23. Total Amount of Federal Funds Obligated this budget period</b> | \$1,404,000 | <b>24. Total Approved Cost Sharing or Matching, where applicable</b> | \$0 | <b>25. Total Federal and Non-Federal Approved this Budget Period</b> | \$1,404,000 | <b>26. Project Period Start Date (9/15/2024 – End Date 08/31/2027)</b> |  | <b>27. Total Amount of the Federal Award including Approved Cost Sharing or Matching this Project Period</b> | \$1,404,000 |
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| <b>10. Program Official Contact Information</b>   | <b>28. Authorized Treatment of Domestic Income</b>   |   |  |   |  |   |             |                          |           |                            |           |                                 |  |                   |  |   |             |  |     |  |             |  |  |  |             |

- 
- Data entry from Award notifications to Award screens in Grants system
    - High volume of awards
    - Manual, tedious task
    - Prone to errors
  - Automating could free staff time for higher value add activities

Editing: AWD02/7804

**Award - General Information**

**Project Title:** ?  
Turning back biological clock: mechanisms of age reversal in a whole organism

**Extended Full Project Title:** ?  
Turning back biological clock: mechanisms of age reversal in a whole organism

**Administrative Home:** ?  
MM Molec & Integratv Physiolog ... ✕

**Award Type:** ?  
Grant

Indicate if this is a Cooperative Agreement.  
 Cooperative Agreement  
[Clear](#)

**Direct Sponsor:** ?  
Health and Human Services, Department of National Institutes of Health ... ✕

**Prime Sponsor:** ?

**Federal Award Identification Number (FAIN):** ?  
DP2AG093207

**Catalog of Federal Domestic Assistance (CFDA):** ?  
93.866

# Business Requirements

- ❑ Focus on Federal Awards only
- ❑ Streamline process for awarding all proposals/agreements
  - Confusing to have two processes
- ❑ Future expandability
- ❑ Engage Sponsored Projects office early in the process once prototype was built
  - Testing partners and part of the design process
- ❑ Integrate human checkpoints to validate AI recognition of data fields
  - Side by side comparison of data pulled with document read
  - Per field validation
- ❑ User validation prompt to prevent unintentional duplicate run of AI tool



# Evaluating Options

- RPA - Robotic Process Automation software
  - Already in use by another part of U-M business operations
  - Required license/cost
  - Sharing software “owned” by another department can be challenging
- Using AI as a tool to read the Award Document
  - ITS at U-M had invested resources and tools for AI exploration
  - Initially free
  - Resources and interest by staff



# Partnership & Iterative Design

October 2023

June 2024

- Set up the structure
  - Met with ITS Emerging Technologies team to think through feasibility
  - Worked with developers to assemble framework for technical pieces
  - Built the API to access the AI toolkit
    - Initial query with a few data fields
    - Receiving data structure and setup API call response mapping
- Once prototype was built, engaged business partners early in the process
- Released early version in a sandbox environment to allow for months of testing
  - Parallel testing manual vs. AI tool
  - Focused on collecting facts: Business office filled out form, so IT staff could systematically investigate what was not working

# System Demo: eResearch Proposal Management

## Proposal Management

Used for the electronic routing, approval, and submission of proposals (PAFs) and Unfunded Agreements (UFAs) to external sponsors, Clinical Trial Routing Forms, and Awards.

[Learn more >](#)

# Technical Details - Set up

- U-M has a number of AI offerings based on Microsoft AI offerings.
  - We are using the U-M ToolKit - most sophisticated AI offering from U-M.
  - We provide a custom data set that allows improvements in the calls as familiarity with the data set improves.
  - Also has an API which we can use to connect with our Grants store
- Response is in Python Dictionary format that we can then convert and store in our database

# Technical Details - continued

- User opens the form
  - Created an Inview PDF view (not AI)
- Additional Fields are ones we don't ask AI to search for
- Returned data fields are stored as string fields.
  - This helps with troubleshooting and improving the query

# Technical Details - Adobe API

- To display a searchable PDF in the view we are using “[Adobe PDF Embed API](#)”
  - Allows developers to place a pdf viewer in an HTML page and display a PDF in the viewer.
  - In current Huron system, we use a view, a site designer, and a custom script.
- The view contains a DIV that will hold the PDF and a site designer.
- Site designer gets the URL out of the corpus to be displayed and make the custom script SearchPDF.js available on the page.
- The SearchPDF.js accesses the API to display the document and also manage search.

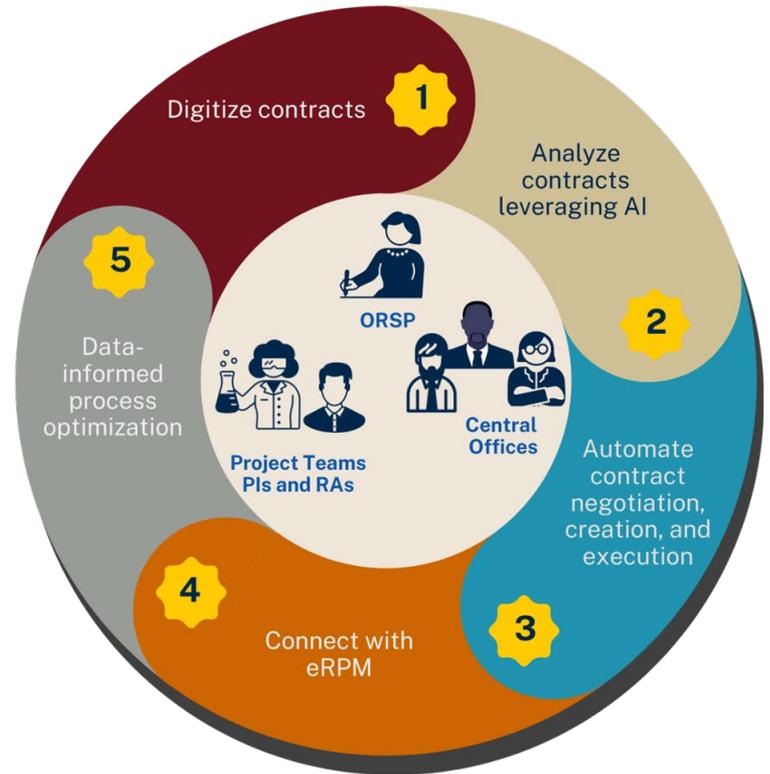
# Challenges & Considerations

- No consistency in Federal Award Documents
  - Field names are different across sponsors
  - Data Types are not consistent (project period versus budget period, date formatting)
  - Missing data elements
- Evolving technology so be prepared for changes
  - Fourth iteration of GPT in 8 months
- Cost
  - Charges per token
  - Resources to build APIs, maintain, test



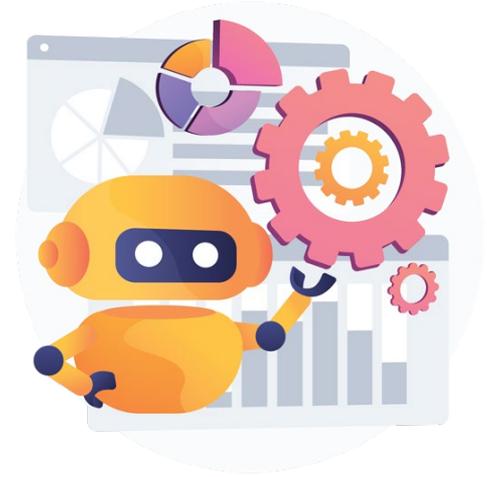
# Contract LifeCycle Management

- Contract Creation
- Contract Review/Negotiation
- Workflow Reviews/Approvals
- eSignature Integration
- Full Process Transparency
- Searchable Contract Repository
- Analytics



# Ironclad Contract Lifecycle Management - AI tool

- Easily trained with existing playbook
  - Plan for time to map your preferred language correctly
- Works in conjunction with the contract playbook
- Assistive for negotiators, reduces human error
- Does not replace human review
- Repository - AI identification of clauses
- AI Assist - Chat GPT style feature where negotiator can give the AI prompt to request suggested custom redlines to a clause



# Generative AI Integration

party any Confidential Information during and for a period of five (5) years from the date of disclosure provided that if Confidential Information is disclosed orally or in other non-tangible form, Sponsor will supply the University in writing a general description of the Confidential Information and confirmation of its confidential or proprietary status within twenty (20) working days of disclosure.

15.2 The obligation to protect Confidential Information shall not apply to any information that: (1) is already in the possession of, or is independently developed by, University; (2) becomes publicly available other than through breach of this provision; (3) is received by University from a third party with authorization to make the disclosure; (4) is released with Sponsor's written consent; or (5) is required to be released by legal process or other legal authority.

AI ASSIST

### Redline

How would you like to redline this?

EX: "Add termination for convenience"

Submit

Hide suggestions

- Make confidentiality mutual between University and Sponsor.
- Change the confidentiality period from five years to three years after disclosure.
- Add a clause for penalties in case of breach of confidentiality.

Sponsored Projects

1001  
274

AI Assist suggestions, powered by OpenAI, do not constitute legal advice; manual review is recommended. Contract information is not used to train their models and remains private to you.



How would you like to redline this?

Make confidentiality obligations mutual between University and Sponsor.

Submit

Show suggestions

< 1 of 3 drafts >

University **and Sponsor** agrees to use confidential or proprietary information and data acquired from **Sponsor** each other and identified as confidential or proprietary at the time of disclosure ("Confidential Information") only in performing the services of this Agreement and not to disclose to any third party any Confidential Information during and for a period of five (5) years from the date of disclosure, provided that if Confidential Information is disclosed orally or in other non-tangible form, **Sponsor** the disclosing party will supply the **University** the receiving party in writing a general description of the Confidential Information and confirmation of its confidential or proprietary status within twenty (20) working days of disclosure.

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#

The obligation to protect Confidential Information shall not apply to any information that: (1) is already in the possession of, or is independently developed by, **University** the receiving party; (2) becomes publicly available other than through breach of this provision; (3) is received by **University** the receiving party from a third party with authorization to make the disclosure; (4) is released with **Sponsor** the disclosing party's written consent; or (5) is required to be released by legal process or other legal authority.

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# Future Projects at U-M

- Searching for Reports
  - Building a prompt to help Research Administrators find reports
- Streamlining the Pre-Award Process

What AI-inspired projects are you planning or have done at your institution?

# Questions?



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