State of ADS

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CENTER FOR ASTROPHYSICS HARVARD & SMITHSONIAN

astrophysics data system

NASA

astrophysics data system

Dr. Jennifer Lynn Bartlett

Jennifer Lynn Bartlett is the ADS project scientist for astrophysics. She joined the team in 2023.

After obtaining her doctorate in astronomy from the University of Virginia in 2007, she joined the US Naval Observatory. Until 2021, she was chief of the Software Products Division producing astrometric libraries and applications. From 2021–2023, she accepted a rotation as Kinnear Chair to teach physics and astronomy at the Naval Academy. She also co-authored one popular book on planetary science. Because of her passion for the history of astronomy, she is the chair of the American Astronomical Society's Working Group on the Preservation of Astronomical Heritage.

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Overview

- Project Funding
- ADS Staffing
- Programmatic Goals for FY24 & FY25
- Review of 2022 ADSUG Recommendations

Project Funding

March 2021: ADS baseline funding set by NASA Astrophysics Division

- Five-year cooperative Agreement started on March 1, 2021
- Funds ADS at optimal levels with a staff of 16 FTEs

May 2021: Augmentation for Planetary Science and Heliophysics

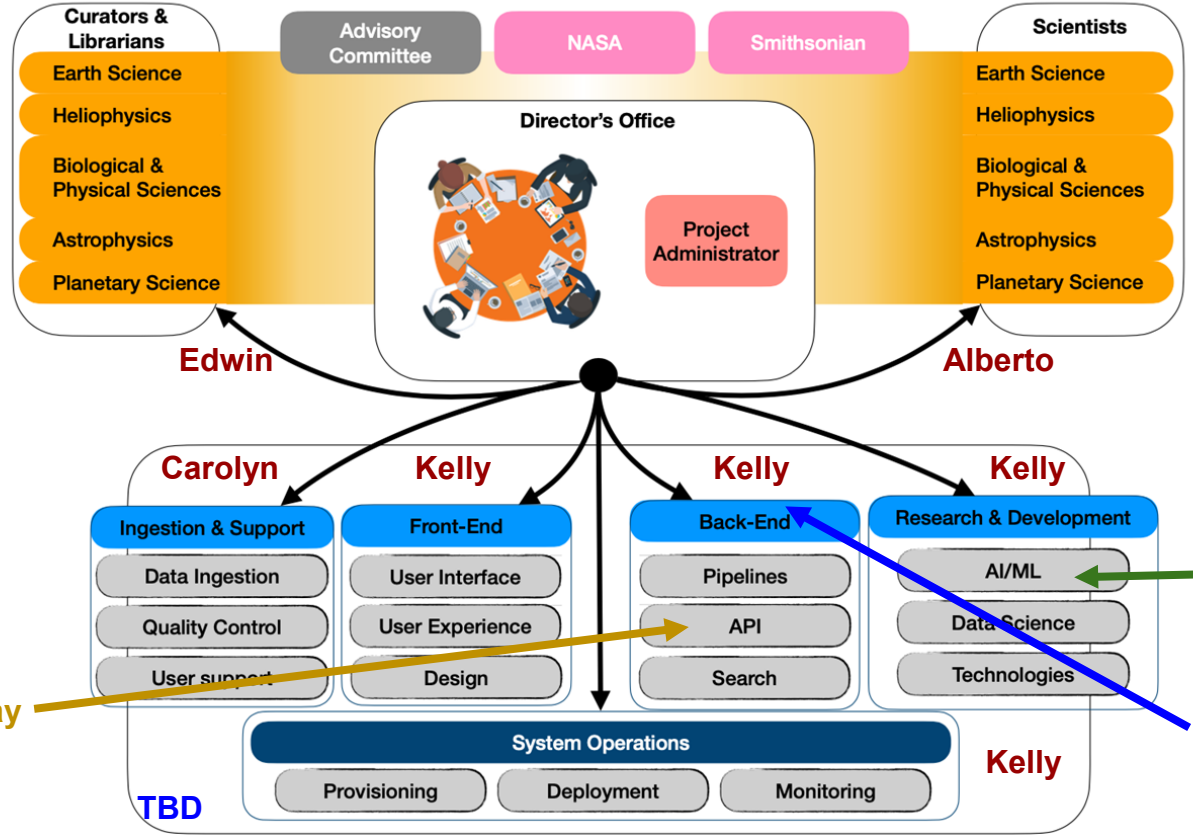
- Adds 3 FTEs, expands scope of ADS's content and user base
- 15-month effort, includes request to develop larger plan for SMD

Sep. 2022: Augmentation for Earth and Biological and Physical Sciences

- 3.5-year plan with incremental staff increases
- Retains 3 FTEs increment for PS and HP, adds 4 FTEs in FY23
- Increases overall staffing to 16 FTEs over "baseline ADS" by 2026
- Ultimate goal is to serve all of NASA SMD's disciplines

February 2024: Senior Review

Organization (leads employees consultants students)



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Advertise recruitment as broadly as possible

- 2/3 Project scientists filled, 1 offer pending
  - Familiar outlets for astrophysics, planetary science
  - Less aware of geoscience networks

- 4/5 Developers filled
- CfA improving institutional processes to streamline hiring and onboarding

2022 ADSUG Recommendation

Hassan via Pixabay

Allow staff to work remotely
Allow non-CfA project scientists

- CfA rules prohibit additional remote hires
  - Local staff option of 3 days/week onsite
  - 3 project scientists are local
  - ~7 full-time remote employees grandfathered
- Contractors still can be remote
  - ~ 2 part-time, remote: journal liaison, community engagement

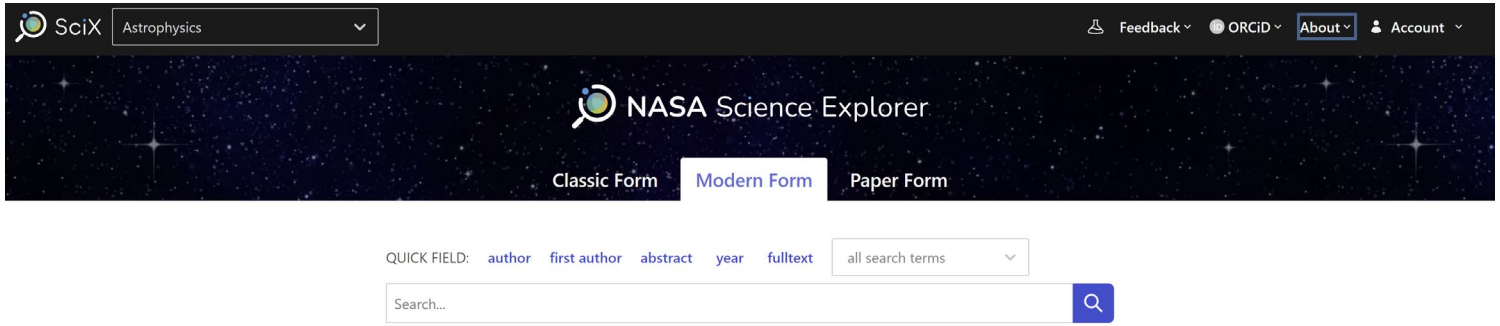
Hassan via Pixabay

2022 ADSUG Recommendation

Program Accomplishments FY 2023

- ✓ Data Holdings: Developed reporting system and metrics to evaluate coverage levels for astronomy and other disciplines
- ✓ Content Expansion: Planetary and heliophysics collections are current and over 90% complete
- ○ User Support and Outreach: Participated in AAS, DPS, & AGU meeting and performed user testing with 50 astronomers
- ○ Metadata Enrichment: working on a number of ML activities:
  - ✓ Published astronomy-specific language models and training datasets for named entity recognition and citation context analysis (https://huggingface.co/adsabs)
  - ○ Participating in NASA efforts to build Large Language Models
  - ○ Working on a document classifier to enhance new content ingestion

Project Goals for FY2024-25



User Interface: Launch β-Nectar at AGU 2023 Fall Meeting, prioritizing accessibility & speed of access

Data Holdings: Improve coverage (metadata, full text, references, data, software) across all disciplines, update publisher agreements

User Support and Outreach: Re-energize multi-platform community engagement, and initiate program to improve inclusion & accessibility

Project Goals for FY2024-25

tookapic via Pixabay

System Architecture: updating back-office & cloud infrastructure (storage layer, workflow engine, data schemas, disaster recovery)

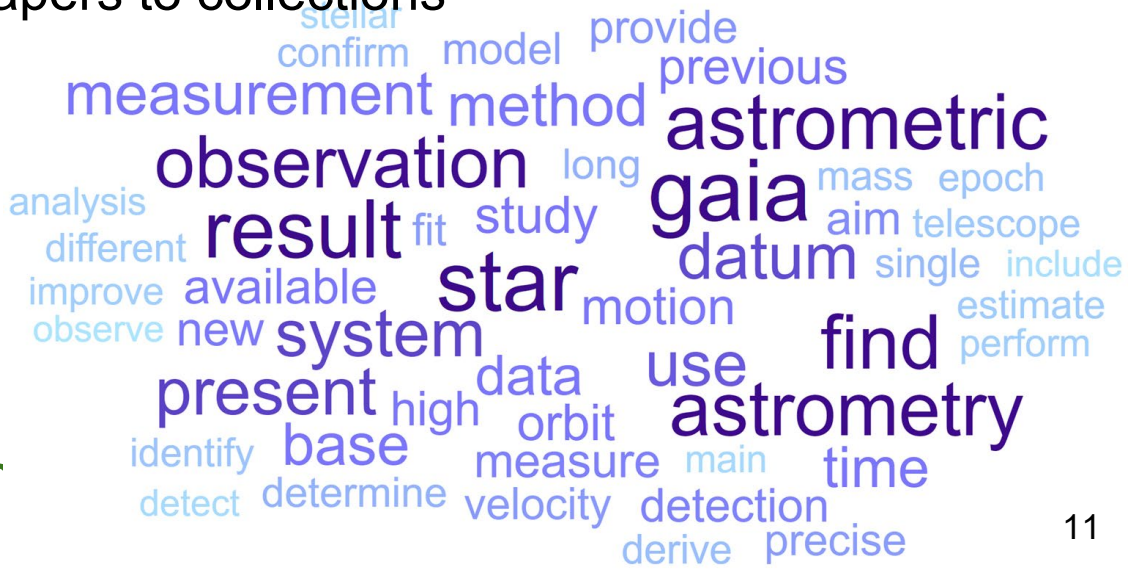
Back-office Updates: modernizing back-office components (identifiers, harvesting pipelines, reference resolver, curation workflows)

AI/ML Efforts: continuing language model projects with NASA partners & CS community; collaborating on bibliography tools

Integrate AI aware labelling tools within search

Coming this year

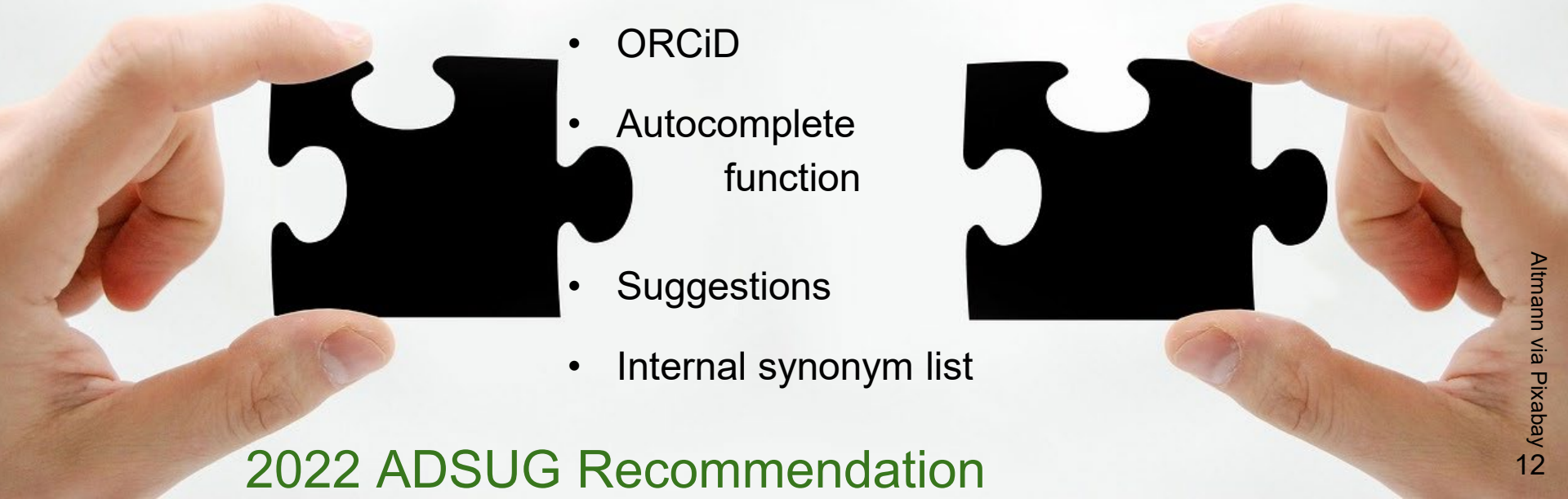
- Assigning Unified Astronomy Thesaurus (UAT) keywords
- Tagging papers with planetary feature names
- Automated assignment of papers to collections
- User feedback accepted



2022 ADSUG Recommer

Investigate how to handle joint-first author papers
Investigate how to expand name synonym support

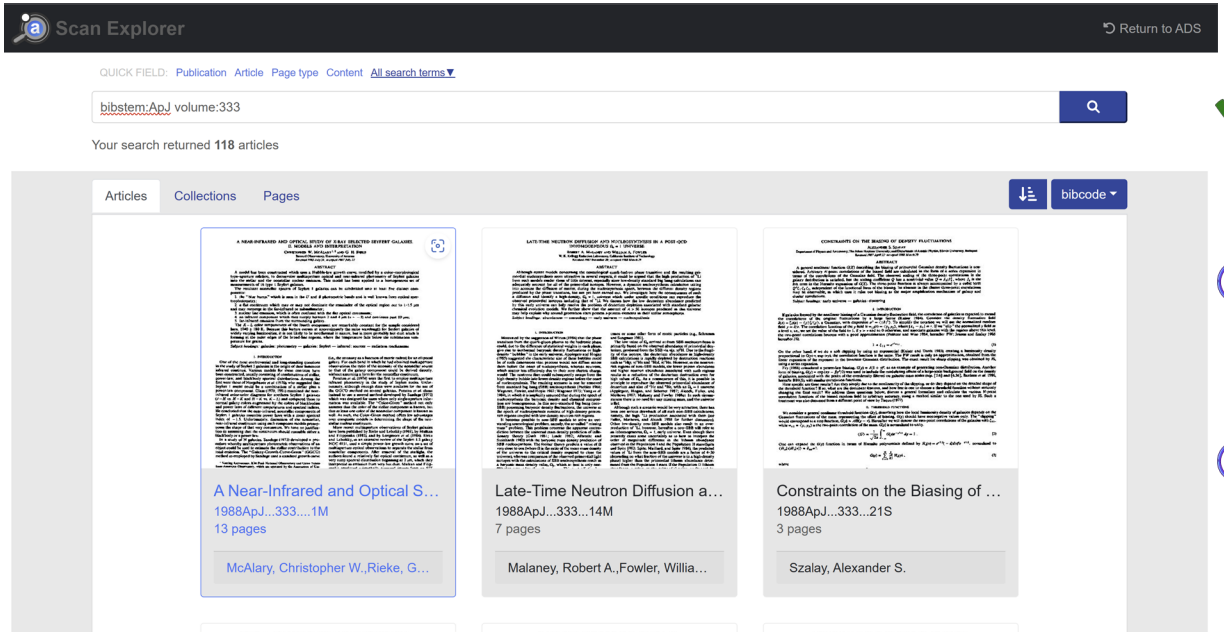
- Recently hired search engine developer
- Joint authorship requires consistent publisher metadata
- Ideas for names



2022 ADSUG Recommendation

Altmann via Pixabay

Schedule termination of legacy systems
Replace legacy code in context of expansion



- ✓ Classic doc matching terminated
- Reference resolver is in testing
- Scan explorer is being scaled for production

- 2024 Q1: Updated parsers covering 90% records will be in production

2022 ADSUG Recommendation

More in Session 3

Use contract IT labor where appropriate

Winter Way continues its support

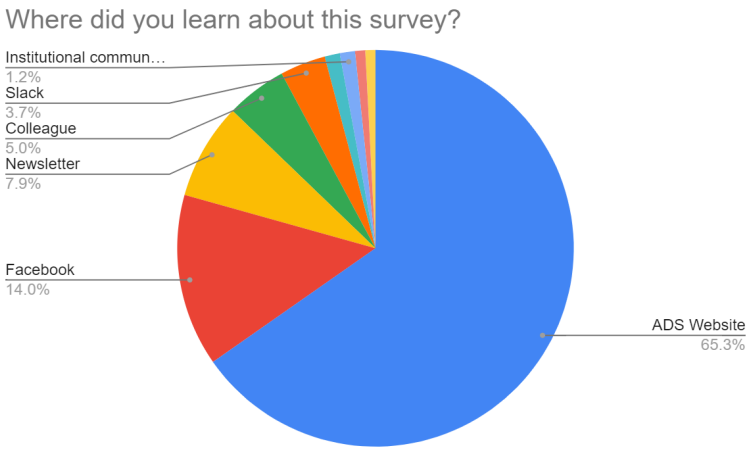
currently redesigning fundamental web services

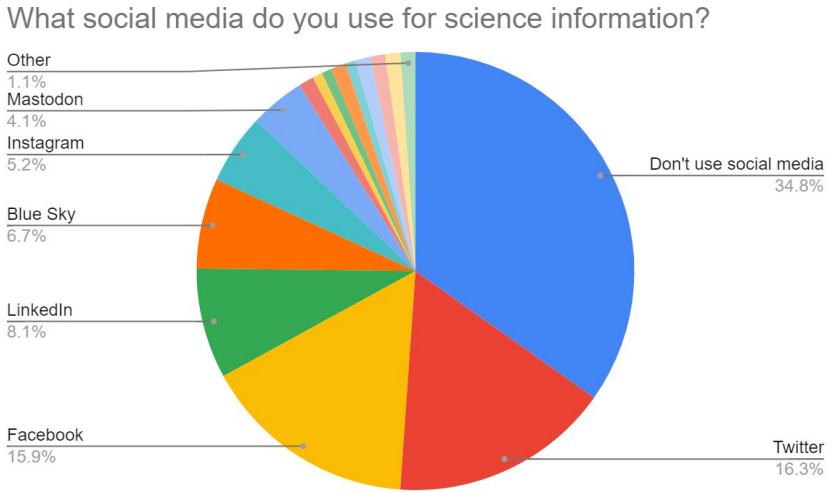
Hassan via Pixabay

2022 ADSUG Recommendation

Provide support across a variety of channels

- Remains area for improvement
  - What are the right channels?
  - New community engagement coordinator
- Further discussion in Session 5

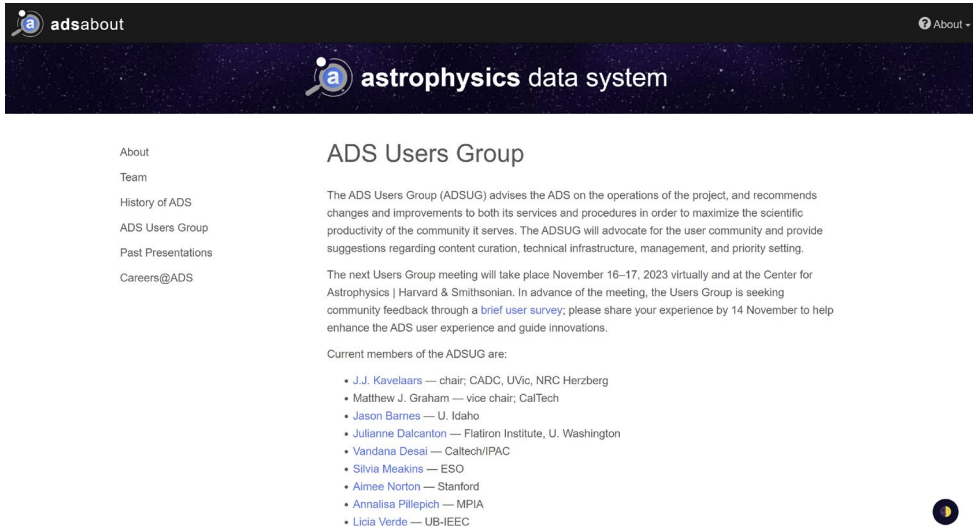




2022 ADSUG Recommendation

Expand ADSUG incrementally for new disciplines

“As SciX is developed, expand, incrementally, the expertise within the ADSUG to allow expanded perspectives to be brought into the UG while maintaining an experienced UG membership who can provide experience driven feedback to ADS and mentorship to UG members from new disciplines.”



Further discussion during Session 5

2022 ADSUG Recommendation

Socha via Pixabay