



The University of Texas at San Antonio™

**Enhancing Research
Insights: Leveraging
Power BI
to Empower End-User**

Presented By:

Bushra Tasnim Zahed

Institutional Research Analyst

[Office of Institutional Research and
Analysis](#)

Session H4

Thursday, Feb 27 4:30pm-5:15pm

About The Presenter

Transforming Data into Actionable Intelligence

- Name: Bushra Tasnim Zahed
- Current Role: Institutional Research Analyst at UTSA
- Background: Master's in Computer Science from UTSA
- Experience: Research data reporting and analysis
- Passion: Transforming data into meaningful stories that empower people to make informed decisions
- Purpose: Unlocking the power of data through clear reporting, insightful benchmarking and strategic analysis



UTSA AT A Glance

Redefining higher education as a next-generation Hispanic-thriving university where students from all backgrounds can excel

University of Texas at San Antonio

- Founded in 1969
- Total Enrolled students 36k
- Carnegie R1, Public, HSI
- 45% first-generation undergrads
- 80% first-time, full-time freshman retained



[As of Fall 2024](#)

Designations of Excellence

Setting UTSA Apart



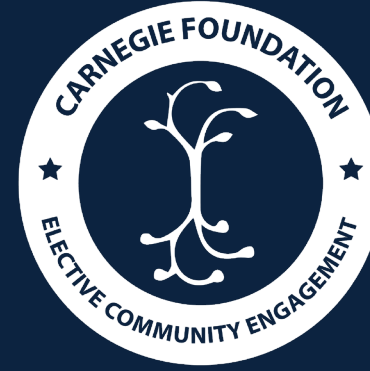
Tier One Research Classification

Recognizes UTSA as one of USA's top 4% research institutions



Excelencia in Education

Recognizes UTSA leadership in advancing Latino student success



Community Engagement Classification

Highlights UTSA's commitment to serving San Antonio region



Innovation & Economic Classification

Highlights UTSA's impact on regional economic growth

Agenda

Transforming Research Data with Power BI



The Need for
Research Data
Automation
using PowerBI



Key Power BI
Reports for
Research
Insights



Demonstration
of Automated
Reporting



Benefits of
Real-Time
Dashboards



Institutional
Impact & Future
Directions

Why do you want to Automate your process?

The Need for Research Data Automation

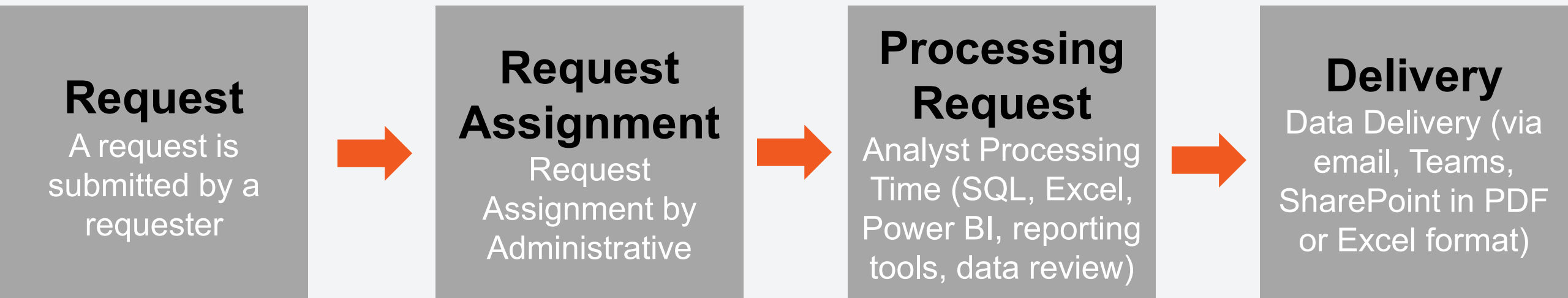
Overcoming Manual Reporting Challenges

Challenges with Manual Reports:

- Error-prone and time-consuming
- Repetitive tasks reduce efficiency and limit innovation
- Limited accessibility (weekly updates only)
- Delays in strategic decision-making
- High volume of data requests with slow turnaround

Traditional Reporting

Before Automation



The Power BI Transformation

Enhancing Research Data Accessibility & Accuracy

How Power BI Solves These Issues:

- **Reduces Errors & Saves Time:** Automates data extraction, minimizing errors and manual effort.
- **Improves Accessibility:** Provides real-time updates and on-demand access.
- **Accelerates Decisions:** Interactive dashboards enable quick trend analysis and insights.
- **Manages High Data Volume:** Self-service reporting reduces backlog and wait times.
- **Eliminates Redundant Tasks:** Automation removes manual intervention for repetitive data requests and reporting.

Automated Reporting

After Automation

Report & Analytics

Real-time Data Access
for end users via
Power Bi and other
automation tools

UTSA[®]

Overview

Keyword Based Award Tracking Report

Overview of Key Power BI Reports

Streamlining Research Data with Power BI

1. Keyword Based Award Tracking Report:

- **Built:** PowerBI, MySql
- **Key Features:**
 - ✓ **Keyword Search:** Title, Abstract, Preadward_Program_Name and Keywords column
 - ✓ **Filters:** Fiscal Year, Sponsor, College and Department
 - ✓ **Export:** End users can download results for further analysis

Traditional Reporting

Funded_FY	Proposal_ID	Title	Abstract	Keywords	Preaward_Program_Name	Start_Date	End_Date	Activity_Type
2025	14860	Brain cancer research study	Brain cancer research study abstract	brain cancer, cancer	DoD /AFOSR Center of Excellence	1/1/2024	1/1/2029	Basic Research
2024	14801	Higher Education Study	Higher education study description	higher ed	City of Free Historic District Guidelines	9/1/2023	8/31/2024	Applied Research
2024	13954	Fighting youth Cancer	Fighting youth cancer abstract descri	youth health	Computer and Information Science an	10/1/2023	9/30/2026	Basic Research
2024	14590	Computer science study	Computer science study abstract des	computer	NIH AIM AHEAD Data & Infrastructure	9/1/2023	8/31/2024	Basic Research
2024	14673	Institutional Research	Institutional Research Abstract Descr	institutional research	T32-MMI: Training Predoctoral Scienti	7/1/2024	6/30/2029	Basic Research
2024	14494	Brain Cancer Evolution and Remedy	Treatment plan description	surface, moment, avail	NRCS Soil Survey Collaborative Grant	8/21/2023	8/16/2027	Basic Research
2025	16587	Need instead believe center.	Suddenly amount American main wh	hit, late, go		1/1/2025	12/31/2025	Applied Research
2025	16262	Testing draft figure	sample abstract description	city, interesting, this, re	CGC SBA Cybersecurity Small Business	1/1/2025	12/31/2026	Public Service
2025	16690	Firm camera with relate training order unt	Sample abstract testing	expect, they, box	Subaward transfer from FAMU	11/1/2024	8/31/2025	Basic Research
2025	15458	Section phone kind many such against.	Week similar international grow mat	write, ask, ask, example	AFRL Minority Leaders Research Colla	4/18/2024	4/17/2026	Basic Research
2024	13784	Across figure player industry sometimes di	Plant issue find executive front. Add	bring, bill, only	Maximizing Investigators' Research Aw	9/1/2023	8/31/2028	Basic Research
2024	14555	Cybersecurity research	cyber security abstract description	Congress, about, parent	Brazil SBDC Project Proposal for Phase	9/1/2023	2/28/2024	Public Service
2024	13928	Company late movement when.	Relationship conference bed cause.	internet	PA-21-235: NIMH Exploratory/Develop	9/1/2023	8/31/2025	Basic Research
2024	14843	Cancer treatment	Cancer teatment abstract description	cancer treatment	2022-34 TMD - Architectural Historian	8/15/2022	8/15/2024	Basic Research
2025	14698	testing draft	test abstract description	officer, able, president	Historically Black Colleges and Univers	9/1/2024	8/31/2027	Basic Research
2024	14638	Writer's block	Writer's block abstract	stand, whole, memory,	Edwards Aquifer Authority	9/1/2023	8/31/2027	Basic Research
2024	14687	Women in education	women in education abstract	education	Scholarships for Service (existing awar	9/1/2023	8/31/2024	Applied Research
2024	14795	Deep learning study	machine learning based research	ml, deeplearning	ORNL	10/1/2023	10/1/2025	Basic Research
2025	15859	testing study	state of the art study	art	Small Research Grants on Education	1/13/2025	7/13/2026	Applied Research
2024	14853	draft test	Cancer treatment abstract description	cancer	Division of Chemistry: Disciplinary Rese	4/1/2024	3/31/2027	Basic Research

Demo Data

Keywords Based Award Tracking Report



Fiscal Year

College

Department

Sponsor

Number of Awards
20

Total Awarded Amount
\$5.5M

Funded_FY	Title	Abstract
2024	Across figure player industry sometimes different security.	Plant issue find executive front. Address all fund. Detail beyond none much professional author
2024	Brain Cancer Evolution and Remedy	Treatment plan description
2025	Brain cancer research study	Brain cancer research study abstract description
2024	Cancer treatment	Cancer teatment abstract description
2024	Company late movement when.	Relationship conference bed cause. Choice report general maybe sense piece. Response positio
2024	Computer science study	Computer science study abstract description
2024	Cybersecurity research	cyber security abstract description
2024	Deep learning study	machine learning based research
2024	draft test	Cancer teatment abstract description
2024	Fighting youth Cancer	Fighting youth cancer abstract description
2025	Firm camera with relate training order until.	Sample abstract testing
2024	Higher Education Study	Higher education study description
2024	Institutional Research	Institutional Research Abstract Description
2025	Need instead believe center.	Suddenly amount American main whether. Near painting gun song central. Role claim morning
2025	Section phone kind many such against.	Week similar international grow matter business author increase. Agent college water. Black clai
2025	testing draft	test abstract description
2025	Testing draft figure	sample abstract description
2025	testing study	state of the art study
2024	Women in education	women in education abstract
2024	Writer's block	Writer's block abstract

Enter Keywords

Searches for Projects by a keyword at a time. The entered keyword is searched across Title, Abstract, Keyword And Pre-award Program Name from the database which is populated via routing form.

Demo Data

UTSA[®]

Overview

Weekly Research Awards Tracker



Overview of Key Power BI Reports

Streamlining Research Data with Power BI

2. Weekly Research Awards Tracker

- **Built:** PowerBI, MySql
- **Key Features:**
 - ✓ **Weekly Award Summary:** Tracks newly awarded proposals with college/department breakdowns and trends over five fiscal years
 - ✓ **Historical Insights:** Provides “At This Time Table” year-over-year performance comparisons for up to three prior years
 - ✓ **Award Addendum:** Monitors proposals pending Notice of Award with durations and key details (PI, department, sponsor, funding)

Weekly Research Awards Tracking Transformation

 Weekly Report_WE27Nov2023.pdf
 Weekly Report Addendum 11272023.pdf



Weekly Research Awards Tracker : Page Navigator ➔ Right **UTSA**

Methodology and Definitions	Page Navigation	Cumulative Award Comparison At Current Time
Cumulative Award Comparison Previous Years	Cumulative Award Weekly Trend	Cumulative Proposal Comparison At Current Time
Cumulative Proposal Comparison Previous Years	Cumulative Proposal Weekly Trend	Weekly and Current Fiscal Year Totals
Weekly Award Summary Report	Award Addendum Report	

UTSA[®]

Demonstration

Keyword Based Award Tracking Report

Streamlining An Ad-Hoc request

Keyword Based Award Tracking Report

Searching for Targeted Research Awards

**Use-
case:**

Request: The Administrative is requesting data for research awards for Fiscal Year 2024 on specific keywords for targeting scholarly awards such as Mary Beth Maddox Award

Keyword Based Award Tracking Report

Searching for Targeted Research Awards

Enhanced:

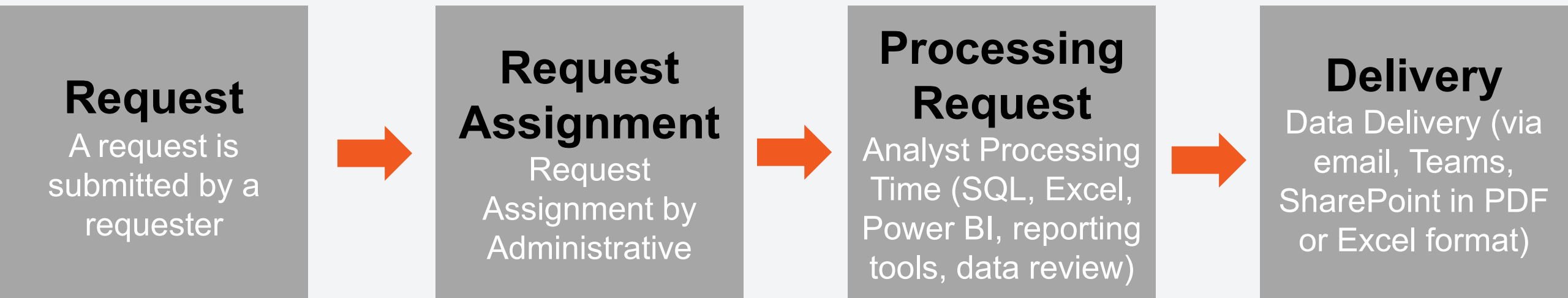
The Old Workflow: Traditional Reporting

The Streamlined workflow:

- ✓ **Automated Dashboard:** Replaces manual steps with daily refresh
- ✓ **Keyword Search:** Retrieves awards with PI, department, and sponsor details for repetitive tasks
- ✓ **Export Ready:** End users can download results for further analysis

Traditional Reporting

Before Automation



Keyword Based Award Tracking Report

Searching for Targeted Research Awards

Enhanced:

The Old Workflow: Traditional Reporting

The Streamlined workflow:

- ✓ **Automated Dashboard:** Replaces manual steps with daily refresh
- ✓ **Keyword Search:** Retrieves awards with PI, department, and sponsor details for repetitive tasks
- ✓ **Export Ready:** End users can download results for further analysis

Keywords Based Award Tracking Report



Fiscal Year

All

College

All

Department

All

Sponsor

All

Enter Keywords

cancer

Searches for Projects by a keyword at a time. The entered keyword is searched across Title, Abstract, Keyword And Pre-award Program Name from the database which is populated via routing form.

Number of Awards

5

Total Awarded Amount

\$1.3M

Funded_FY	Title	Abstract	Keywords	
2024	Brain Cancer Evolution and Remedy	Treatment plan description	surface, moment, available	NRCS Soil Survey Collaborative Grant
2025	Brain cancer research study	Brain cancer research study abstract description	brain cancer, cancer	DoD /AFOSR Center of Excellence
2024	Cancer treatment	Cancer treatment abstract description	cancer treatment	2022-34 TMD - Architectural Historian
2024	draft test	Cancer treatment abstract description	cancer	Division of Chemistry: Disciplinary Rese
2024	Fighting youth Cancer	Fighting youth cancer abstract description	youth health	Computer and Information Science and

Demo Data



Methodology and Definitions

Keywords Based Award Tracking Report



Keywords Based Award Tracking Report



Fiscal Year

College

Department

Sponsor

Number of Awards
2

Total Awarded Amount
\$597.3K

Funded_FY	Title	Abstract	Keywords	Preaward_Program_Name
2024	Brain Cancer Evolution and Remedy	Treatment plan description	surface, moment, available	NRCS Soil Survey Collaborative Grant
2025	Brain cancer research study	Brain cancer research study abstract description	brain cancer, cancer	DoD /AFOSR Center of Excellence

Enter Keywords

Searches for Projects by a keyword at a time. The entered keyword is searched across Title, Abstract, Keyword And Pre-award Program Name from the database which is populated via routing form.

Demo Data

UTSA[®]

Demonstration

Weekly Research Awards Tracker

Streamlining A Routine Process

Weekly Research Awards Tracker

Monitoring Research Award Activities

Use- case:

Request: The Administrative wants to track research growth over time in weekly basis. They want to track pending awards, identifies sponsor delay patterns, and helps leadership anticipate budget and project timelines

Weekly Research Awards Tracker

Monitoring Research Award Activities

- **The Old Workflow:** Like traditional reporting with additional steps
- **Additional Steps:**
 - ▶▶ The data is prepared by an analyst every week from different sources (Internal Dashboards & Routing Form)
 - ▶▶ The data is presented using a template document
 - ▶▶ The final data is delivered in Pdf document format
 - ▶▶ The recipient list is managed and updated using an excel file

Weekly Research Awards Tracker



Monitoring Research Award Activities

Enhanced:

The Streamlined workflow:

- ✓ Developed a PowerBI dashboard to replace the manual steps
- ✓ The dashboard is shared with selected end users
- ✓ The dashboard is daily scheduled to refresh
- ✓ Automatic fiscal year updates and filter options available
- ✓ Additional columns and filter option added according to end-users' feedback from the old workflow
- ✓ End-user can export data for further analysis

Weekly Research Awards Tracking Transformation

 Weekly Report_WE27Nov2023.pdf
 Weekly Report Addendum 11272023.pdf



Weekly Research Awards Tracker : Page Navigator ➔ Right **UTSA**

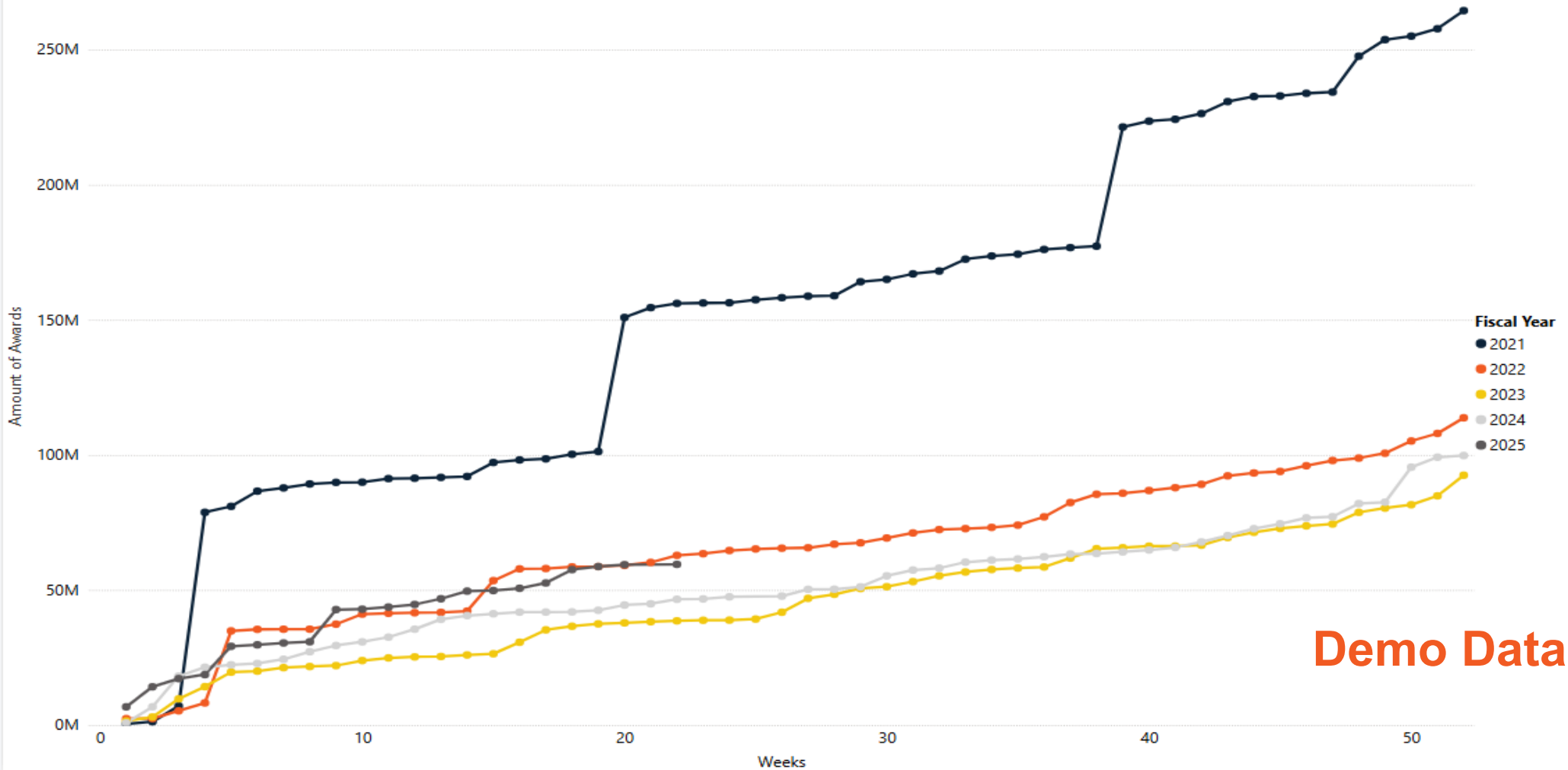
Methodology and Definitions	Page Navigation	Cumulative Award Comparison At Current Time
Cumulative Award Comparison Previous Years	Cumulative Award Weekly Trend	Cumulative Proposal Comparison At Current Time
Cumulative Proposal Comparison Previous Years	Cumulative Proposal Weekly Trend	Weekly and Current Fiscal Year Totals
Weekly Award Summary Report	Award Addendum Report	

Cumulative Award Weekly Trend



Breakdown of Awards - Cumulative

UTSA - Last 5 Fiscal Year Awards



Demo Data

Award Summary Report

Funded Date		College	Department	Sponsor	Total Awards	Total Amount
1/27/2025	2/2/2025	All	All	All	6	13.7M

Proposal ID	Title	Abstract	Awarded Amount	Principal Investigator
15510	Testing Institutional Research Survey	Testing Institutional Research Survey abstract	1845670	John Doe (25.00% Shared Credit for College for Health, Community and Policy)
13945	Public Health Summary	Public health summary description	11450087	Jack Jill (100.00% Shared Credit for VP Business Affairs)
15024	Cancer Study	Test Cancer Study abstract	34000	Jack David (50.00% Shared Credit for VP Research, Economic Development and Knowlec
16851	2025 Outreach Public Program	The Outreach Public program is a demo data.	232001	John David(100.00% Shared Credit for Klesse College of Engineering and Integrated De
16673	Studying Educational games	Studying abstract	60000	Mary Beth (100.00% Shared Credit for College of Sciences)
16880	Studying Immunit Disorder	Testing abstract	73000	Alan Joe (100.00% Shared Credit for College of Sciences)

Demo Data

Award Addendum Report



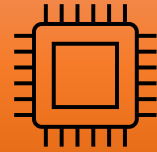
Fiscal Year	College	Department	Sponsor	Total NOA Pending Awards	Total Expected Funding
All	All	All	All	7	590.9K

Proposal ID	Fiscal Year	Title	Weeks Pending NOA	College	Department
11031	2023	Brain cancer research study	79	College of Liberal and Fine Arts	DEPARTMENT OF ART & ART HISTORY
12189	2023	Higher Education Study	50	Klesse College of Engineering and Integrated Design	DEPARTMENT OF ELECTRICAL ENGINEERING
12453	2025	Cybersecurity research	1	College of Sciences	DEPARTMENT OF NEUROSCIENCE, DEVELOPMENTAL
13298	2025	Brain Cancer Evolution and Remedy	2	Klesse College of Engineering and Integrated Design	DEPARTMENT OF CIVIL ENGINEERING
14213	2024	Computer science study	32	College of Liberal and Fine Arts	DEPARTMENT OF MUSIC
15628	2023	Fighting youth Cancer	40	Klesse College of Engineering and Integrated Design	DEPARTMENT OF ELECTRICAL ENGINEERING
19234	2025	Institutional Research	4	Klesse College of Engineering and Integrated Design	DEPARTMENT OF BIOMEDICAL ENGINEERING
Total	14168		208		

Demo Data

Strategic Thinking for Success

Incorporating key steps to identify processes, skills, and limitations can help drive strategic decision-making. By focusing on the end-user and overcoming challenges, we pave the way for sustainable success.



Identifying The Process



Identifying The End-User



Identifying The Skillset



Identifying The Limitations



Winning The Limitations

Key Takeaways

Benefits & Impacts



Efficiency Gains:

Reduces manual work and streamlines data requests



Proactive Decision-Making:

Real-time insights improve research administration



Transparency & Accessibility:

Empowers leadership with immediate, self-service reporting



Better Resource Allocation:

Freeing analyst time for strategic tasks (trend analysis, evaluation)



Alignment with Institutional Goals:

Goals:
Supports strategic initiatives in research growth and funding success

Future Work

Reporting & Analytics Enhancement



Expand Filtering Options: More refined search capabilities



User Training & Adoption: Workshops for faculty & research staff



Enabling Advanced Analytics: Multi-topic comparisons to identify research trends, integrating advanced analytics with additional data internal data sources.

Scan the QR code
to complete the
session survey.





Thank you

Question/Answer?



Contact Email: bushratanim.zahed@utsa.edu