

A graphic featuring a blue line that starts on the left, curves up to form a semi-circular arch over a stylized orange brain icon, and then continues as a horizontal line to the right.

UC TECH 2025

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Building Spark: A Campus-Agnostic Tool Supporting Student Success

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UC Irvine

About UCI

Extremely diverse

#3 for Top Colleges in the West for Diversity

#4 in 30 best colleges for students with learning disabilities

New Carnegie designation:
Higher Access, Higher Earnings (1 of 3 in AAU)

HSI & AANAPISI

Hispanic and Asian American and Native American Pacific Islander Serving Institution

<https://uci.edu/university-facts/>

UCI Points of Pride



UCI Compass TLA Spark

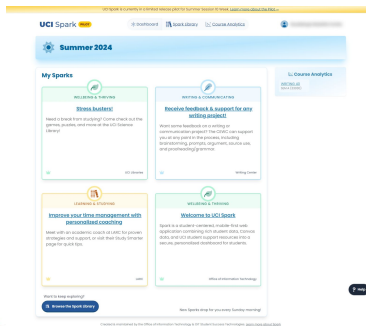
What is Spark?

Spark is a personalized, data-driven dashboard built on the **Unizin Data Platform** that links students with targeted resources to support well-being and success. Learn more: <http://tla.ovptl.uci.edu/spark>

Student
Questionnaires &
Goal-Setting

Student Engagement,
Outcomes, &
Demographics Data

Campuswide
Empowerment
Library



What is a spark?

Category

Grouped into five distinct categories to ensure diversity of resources. Categories have a unique icon and color-coding to further differentiate them.



LEARNING & STUDYING

Improve your time management with personalized coaching

Meet with an academic coach at LARC for proven strategies and support, or visit their Study Smarter page for quick tips.

Secondary actions

Interactions within Spark to encourage engagement and return visits. Students can **favorite** a spark or **provide feedback**.



LARC

Call to Action

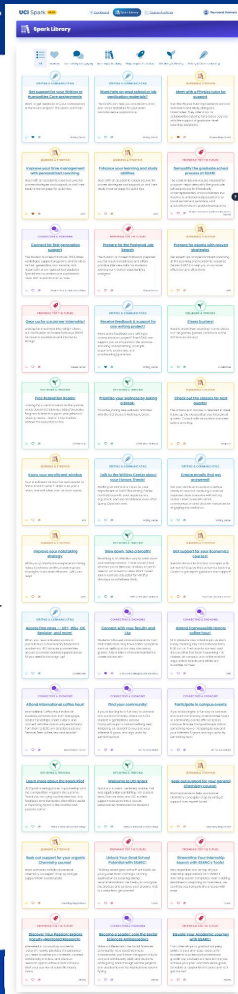
Actionable, immediate, and relevant.

Description

Evidence, background, reasoning, etc.

Office

Convey authenticity and authority of suggestions via our campus experts.



Product Walkthrough

Dashboard

- Application entry point
 - Tour on first visit
- Displays up to 4 **sparks** (targeted actionable resource)
- Refreshed weekly
- Easy access to class-level analytics features
- Mobile-friendly layout

The screenshot shows the UCI Spark dashboard for Spring 2025. At the top, a banner states "UCI Spark is available as a campus-wide pilot for Spring Quarter 2025. [Learn more about the Pilot](#)." Below this is a navigation bar with "UCI Spark" (marked as a PILOT), "Dashboard", "Spark Library", and "Course Analytics". A user profile icon is in the top right.

The main content area features a green header for "Spring 2025". On the left, a "New!" notification box prompts users to "Tell us what you think by Friday, 5/2 11 AM" with a "Take the short survey" button. Below this is a "Course Analytics" section showing "HUMAN 1C LEC B (28110)" and several blurred data rows.

The central "My Sparks for Week 5" section displays four targeted resources:

- CONNECTING & ENGAGING:** "Connect with your faculty and TAs" - Encourages students to seek advice from instructors for study ideas, grades, and career advice. (Division of Undergraduate Education)
- WELLBEING & THRIVING:** "Explore arts and culture at UCI!" - Promotes UCI Illuminations events. (UCI Illuminations)
- WRITING & COMMUNICATING:** "Receive feedback & support for any writing project!" - Offers support from the CEWC for writing projects. (CEWC)
- WELLBEING & THRIVING:** "See an exciting performance at a bargain price" - Promotes student discounts on performances. (UCI)

A "? Help" button is located in the bottom right corner.

Course Analytics

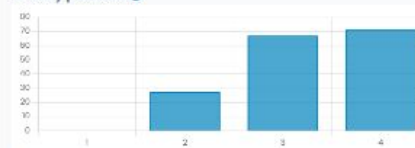
- Visualizes course activity, assignment submission trends, and heatmap of activity over time
- Goal is to increase awareness around LMS usage and activity
- Displays related sparks

Your Canvas Engagement

[Manage My Analytics](#)

- This section highlights key areas of your course participation—when and how you submit assignments, and your activity in Canvas.
- By examining these patterns, you can better understand your study habits and make informed decisions about your schedule.
- Think of these visuals as a guide to help you stay on track and maintain a balanced approach to your coursework.
- Everyone's circumstances differ, so reach out to your instructor or advisor for support.

Activity per week



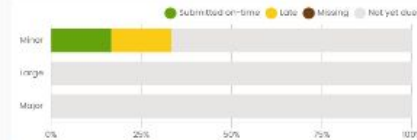
Change in activity week over week



Why it matters

- Timely insight for timely support:** Tracking week-to-week activity helps identify emerging disengagement early, allowing you—and your instructors or advisors—to intervene before it affects learning outcomes.
- Consistency fosters mastery:** Regular interaction with course materials is strongly linked to deeper comprehension, higher retention, and better overall performance than intermittent, last-minute engagement.
- Data-informed self-management:** Reflecting on your activity trends empowers you to adjust study habits, redistribute workload, and leverage available resources, promoting a balanced and sustainable approach to your coursework.

Assignment Submission Trends



Why it matters

- Identify Patterns:** Quickly see where you're on track and where you might need to catch up.
- Plan Ahead:** Recognize if you tend to submit late for certain assignments so you can adjust your study schedule or seek support.
- Self-Reflection:** These trends can help you understand your study habits and consider strategies for supporting your goals.

Everyone's circumstances differ. If you see late assignments, reach out to your instructor or advisor for help.

Canvas Course Activity by Day & Time



Why it matters

- Optimize Your Schedule:** Spot the times you naturally gravitate toward coursework. You might discover when you're most productive or when you could use a break.
- Balance & Well-Being:** Recognizing your peak study hours can help you plan other commitments around your course activity.
- Personal Insight:** Understand whether you're logging in consistently or cramming at certain times, and adjust as needed.

These visuals don't capture offline study or other activities. They're just one indicator of engagement. Don't worry if your schedule differs—everyone's learning style is unique.

Spark Library

- Browsable index of all sparks in the tool
- Supports category filtering, favoriting, & history
- As resource library expands, additional filter options may be added

The screenshot displays the UCI Spark Library interface. At the top, there's a navigation bar with 'UCI Spark PILOT', 'Dashboard', 'Spark Library', and 'Course Analytics'. Below this is a 'Spark Library' header. A row of icons represents different categories: Alphabetic, Favorites, History, Connecting & Engaging, Learning & Studying, Preparing for the Future, Wellbeing & Thriving, and Writing & Communicating. The main content area shows a grid of resource cards. Each card has a category icon, a title, a description, and a source attribution.

Writing & Communicating

- [Access free news -- NYT, WSJ, OC Register, and more!](#)
- When you need a trusted source in journalism or a momentary break from academics, UCI Libraries provides free access to several reputable publications. All you need to do is sign up!
- UCI Libraries

Connecting & Engaging

- [Are you the first in your family to attend college?](#)
- Students who are the first in their family to attend college can have questions about navigating the university, connecting with support programs, utilizing financial aid, or meeting major requirements. Stop by SSI's office for support and community.
- SSI

Connecting & Engaging

- [Attend Campuswide Honors coffee hour!](#)
- CHC students are invited to join us each Friday morning any time between 9:00-11:00 a.m. in The Locus to connect and discuss what has been happening - in classes, on campus, and in the world at large. Select snacks and drinks are available for free!
- CHC

Connecting & Engaging

- [Attend International coffee hour!](#)
- International Coffee Hour invites all students, scholars, and staff to engage, create friendships, share culture, and connect with the community each Friday from 11am to 12:30 pm at Science Library Terrace. Free coffee, tea, and snacks!
- International Center

Connecting & Engaging

- [Be a part of UCI's tradition of students helping students!](#)
- Want to help other students get connected to campus resources you found helpful? Various options around campus include Peer Health Educators, school Peer Advisors, International Peer Group mentors, FRESH Hub Peer Educators, and SPOD leaders.
- UCI

Connecting & Engaging

- [Become a Leader: Join the Social Sciences Ambassadors](#)
- Make a difference in the Social Sciences community! As a Social Sciences Ambassador, you'll have the opportunity to connect with faculty, staff, and students while giving back through service projects and academic events. Applications open in Spring.
- SSARC

Questionnaires

- Supports variety of question types
- Can differ between terms
- Opportunity for goal setting, answering research questions, etc.
- Results available in aggregate to researchers

UCI Spark **PILOT**[* Dashboard](#)[Spark Library](#)[Course Analytics](#)Welcome to UCI Spark for **Spring 2025!**

Help us better support your academic journey this quarter through your classes by answering a few quick questions!

Do you feel informed about resources offered by the campus to support your educational success?

- ☐ Yes, definitely
- ☐ Yes, somewhat
- ☐ Unsure
- ☐ No, not really
- ☐ No, definitely not

Which of the following areas do you feel you need the most support with this quarter?

- ☐ Academic advising
- ☐ Career counseling
- ☐ Health & wellness resources
- ☐ Study groups and tutoring
- ☐ Networking opportunities
- ☐ Time management skills
- ☐ Internship opportunities
- ☐ Research opportunities
- ☐ Basic needs (food, housing, transportation, etc.)

What do you hope this tool (UCI Spark) might help you with this quarter?

All questions are required.

[* Submit Responses & Unlock Dashboard](#)

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Technical Details

Unizin

- **Unizin:** member-based (13 R1 public universities) nonprofit that delivers solutions addressing the pressing and complex challenges of data, analytics, and digital content
- **Unizin Common Data Model (UCDM):** integrates and normalizes data from the SIS, LMS, and learning tools
- **Unizin Data Platform (UDP):** implementation of UCDM – data lake, warehouses, and marts that support use-case domains
- Joined in 2022 / implemented in early 2023 / went live Sept. 2023

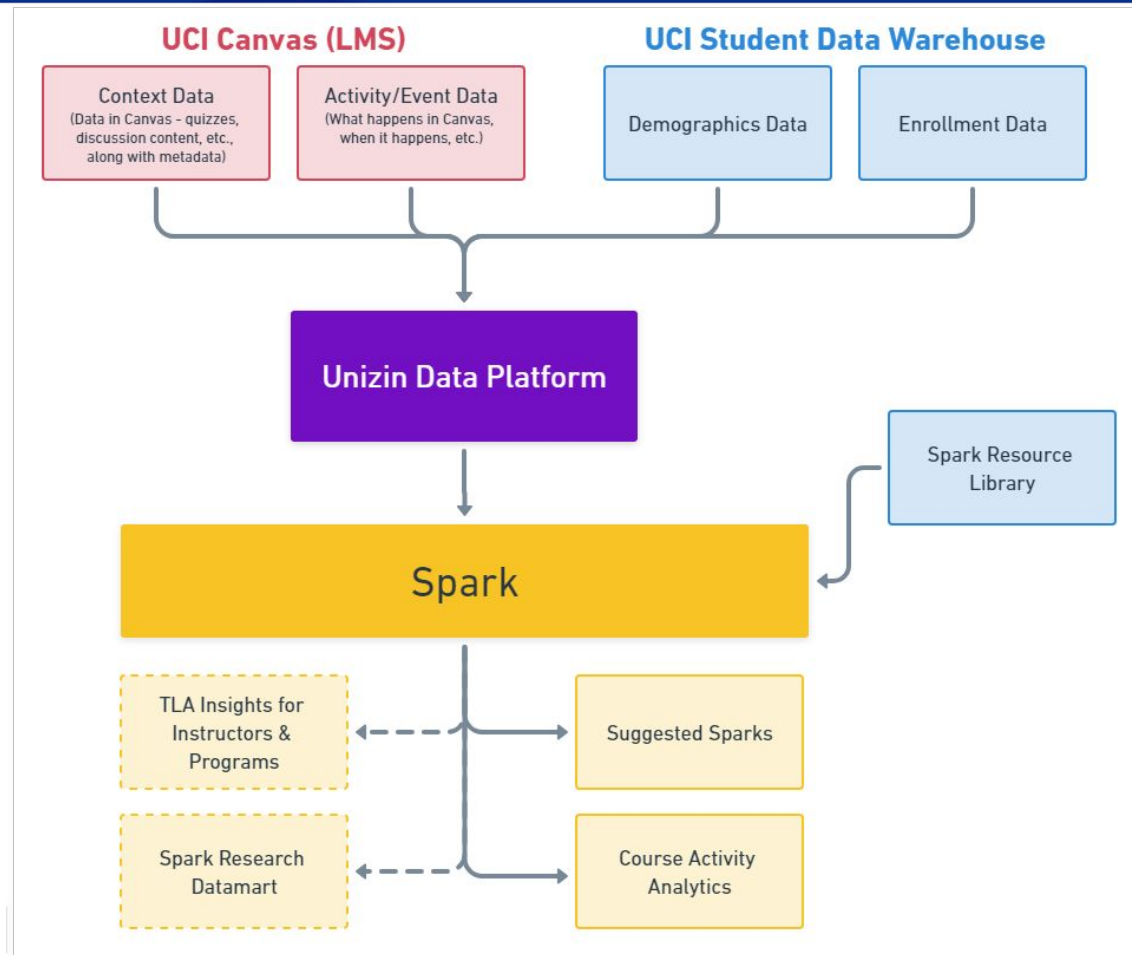


unizin.org

Questions? unizin@uci.edu

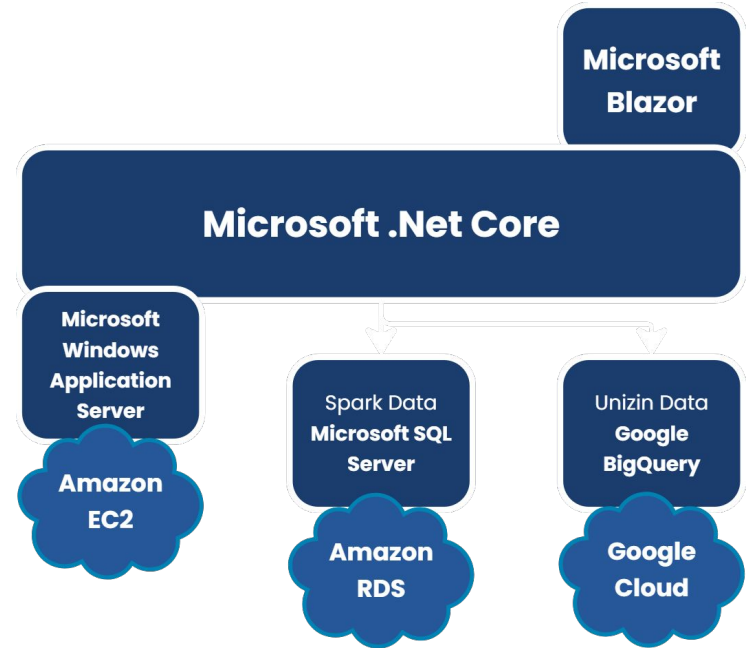
How it works

- Relies on two key systems:
 - UCI Student Data Warehouse
 - UCI Canvas
- **Data flows into Unizin Data Platform (UDP)**
- Data further refined into data marts used by Spark
- Available standalone or via Canvas LTI integration



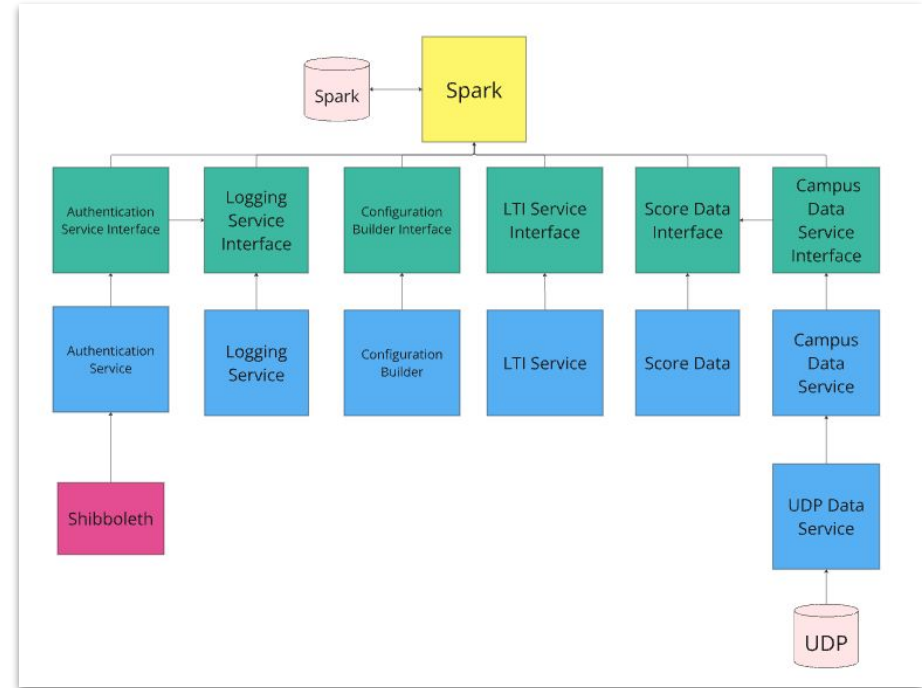
Tech Stack

- Development Frameworks:
 - Microsoft .Net Core, Microsoft Blazor
- Databases:
 - Microsoft SQL Server hosted in Amazon RDS
 - Unizin Data Platform via Google BigQuery hosted in Google Cloud
- Infrastructure:
 - Application hosting: Amazon AWS EC2
 - Database hosting: Amazon AWS RDS
- Design Frameworks:
 - Tailwind CSS, DaisyUI



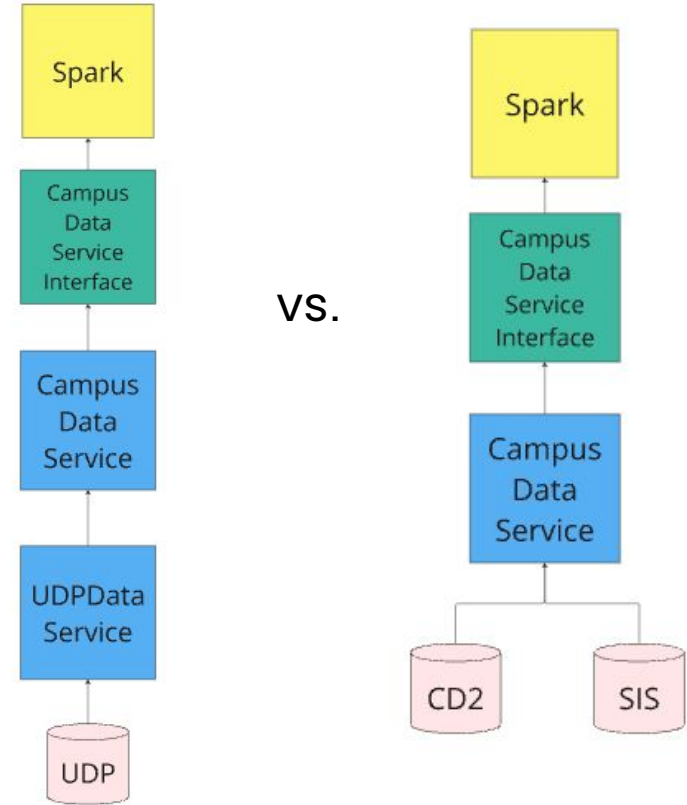
Modular Architecture

- Designed for **campus portability**
- Flexible for campus adoption via custom **Authentication Services** (ships with Shibboleth)
- Exclusively leverages UDP for data to ease campus portability



Sharing with other campuses

- Choose your Canvas Data source
 - Join Unizin & get access to UDP
 - Integrate with CD2
- Authentication service flexibility
 - Ships with Shibboleth
- Logging Service
- Upload your spark library



Spark Upload

- Upload custom spark fields – name, description, URL, etc.
- Current: upload spreadsheet to database & run SQL script
- Future: integrate into UI



Spark Criteria

☒ Criteria

User:

Must match one of the following **Year** criteria:

Criteria Id	Name	Rule	Value	Weight
2	1st year	transfer_status__year = 1stYear_nontransfer	-	3
3	2nd year	transfer_status__year = 2ndYear_nontransfer	-	2

Must match one of the following **Course Enrollment** criteria:

Criteria Id	Name	Rule	Value	Weight
22	Writing Composition	subject_number IN (WRITING 40;WRITING 45;WRITING 50;WRITING 60;HUMAN 1AS;HUMAN 1AES)	-	5

Must match one of the following **Week** criteria:

Criteria Id	Name	Rule	Value	Weight
30	Week 3	3 <= Current Week <= 3 (Any Quarter)	Spring Quarter 2025 Week 5	5
31	Week 4	4 <= Current Week <= 4 (Any Quarter)	Spring Quarter 2025 Week 5	3

Spark Criteria

Field matches range

	Category	Name	Weight	CourseRelated	FieldType	Field	MinValue	MaxValue
18	Upper Div	Upper Div	0	True	course	number	100	199
19	GPA	Low Cumulative GPA	0	False	person	gpa_cumulative	0	2.700000047683716
20	Units	high units enrolled	0	False	person	gpa_credits_units_hours	16	100
50	GPA	GPA above 2.0	0	False	person	gpa_cumulative	2	4
51	GPA	GPA above 3.75	0	False	person	gpa_cumulative	3.75	4
54	GPA	GPA above 3.5	0	False	person	gpa_cumulative	3.5	4
63	GPA	GPA above 2.5	0	False	person	gpa_cumulative	2.5	4
68	GPA	GPA below 3.0	0	False	person	gpa_cumulative	0	3

Field matches value

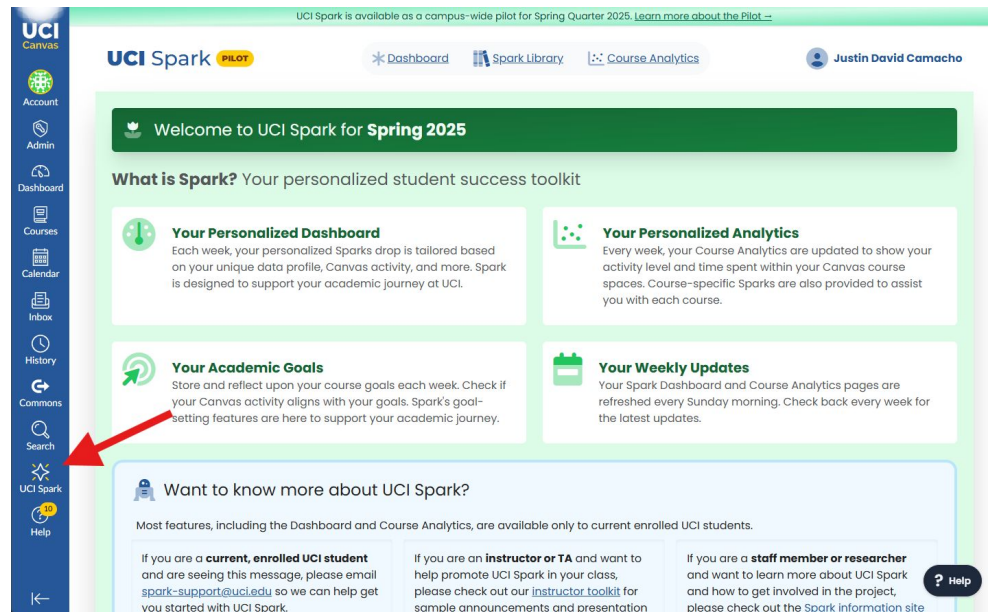
	Category	Name	Weight	CourseRelated	FieldType	Field	TargetValue
2	Year	1st year	0	False	person	transfer_status__year	1stYear_nontransfer
3	Year	2nd year	0	False	person	transfer_status__year	2ndYear_nontransfer
4	Year	3rd year	0	False	person	transfer_status__year	3rdYear_nontransfer
5	Year	4th year	0	False	person	transfer_status__year	4thYear_nontransfer

Spark Criteria

- 5 criteria types
 - Field matches value range
 - Field matches exact value
 - Field matches value in set
 - Time (week #/term)
 - Performance/activity score range
- Upload criteria spreadsheet to database & run SQL script

Learning Tools Interoperability (LTI)

- Technical standard used to connect learning tools with an institution's learning environment without logging into each tool
- Challenges
 - Browsers blocking third-party cookies
 - Performance
 - Duplicate code



Overall Challenges

- Determining object IDs
 - Courses
 - Course space vs. SIS course
 - Different section types
 - Cross-listed courses
 - Users
 - Campus ID vs UDP Person ID vs Username
- Integrating Blazor mid-development

Future

- Comparative course analytics
- Study planning tool
- Performance enhancements
- Incorporating non-LMS data
 - Career Center, campus orgs, etc.
- Share with other campuses
 - Goal is to be easily portable for anyone using the UDP

Questions?

<https://unizin.org/>

<https://tla.ovptl.uci.edu/spark/>

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Thank you!