The Future of the Academic Record and how Technology, and AACRAO, and how all of you are Intertwined.

Mark McConahay

Associate Vice Provost and Registrar

Indiana University

Vice President Information Technology, AACRAO

About AACRAO

A non-profit, voluntary, professional association made up of

more than **11,000 members**

who represent approximately **2,600 institutions**

from more than **40 countries**

Upcoming Meetings

28th Annual SEM Conference
November 11 – November 14, 2018 – Washington, DC

AACRAO on the Road
March 14 – March 15, 2019 – Florida International University

2019 Annual Meeting
March 31 – April 3, 2019 – Los Angeles, CA

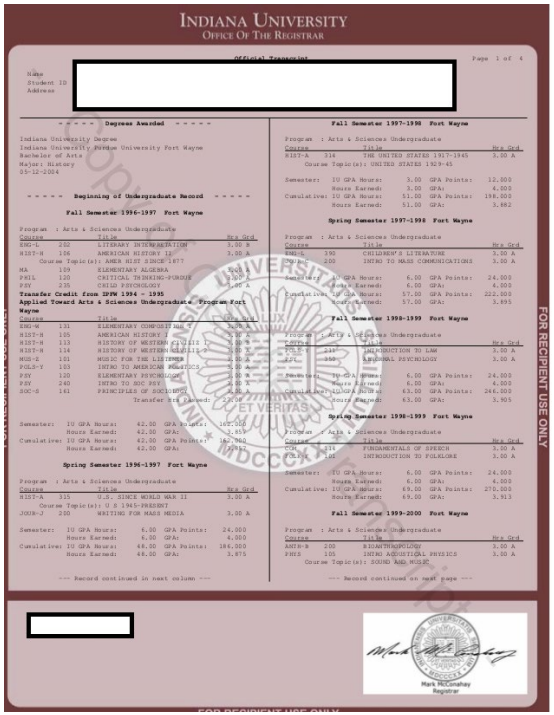
2019 AACRAO Technology & Transfer Conference
July 14 – 16, 2019 – Las Vegas, NV

AACRAO Workgroups/Projects

- Veteran's Reporting
- Student Identity
- Beyond/Ban the Box
- Student Success
- Admissions Career Path
- State and Regional Associations
- GDPR

The Traditional Academic Transcript

- **Laudable Traits of the "Transcript"**
  - Chronological Ledger
  - Governance (Academic Value)
  - Fundamental Standard: Credit Hour
    - The Carnegie Unit
      - Courses
      - Awards
      - Summary Statistics
  - Validity and Integrity
  - Institutional Imprimatur
  - Interoperability (at least in HE)
  - **TRUST**



INDIANA UNIVERSITY
OFFICE OF THE REGISTRAR

Page 1 of 4

Name
Student ID
Address

[redacted]

Degrees Awarded

Indiana University Degree
Indiana University Kokomo University Fort Wayne
Bachelor of Arts
Major: History
05-12-2004

Beginning of Undergraduate Record

Fall Semester 1996-1997 Fort Wayne

Program : Arts & Sciences Undergraduate

Course		Title	Hrs	Grd
ENG-L	202	LITERARY INTERPRETATION	3.00	B
HIST-H	106	AMERICAN HISTORY II	3.00	A
Course Topic(s): AMER HIST SINCE 1877				
MA	109	ELEMENTARY ALGEBRA	[illegible]	
PHIL	120	CRITICAL THINKING-FORMIS	3.00	A
PSY	235	CHILD PSYCHOLOGY	3.00	A

Transfer Credit from IPFW 1994 - 1995
Applied Toward Arts & Sciences Undergraduate Program Fort Wayne

Course		Title	Hrs	Grd
ENG-W	131	ELEMENTARY COMPOSITION I	3.00	A
HIST-H	105	AMERICAN HISTORY I	3.00	A
HIST-H	113	HISTORY OF WESTERN CIVILIZ I	3.00	B
HIST-H	114	HISTORY OF WESTERN CIVILIZ-2	3.00	X
MUS-Z	101	MUSIC FOR THE LISTENER	3.00	A
POLS-Y	103	INTRO TO AMERICAN POLITICS	3.00	A
PSY	120	ELEMENTARY PSYCHOLOGY	3.00	X
PSY	240	INTRO TO SOC PSY	3.00	X
SOC-S	161	PRINCIPLES OF SOCIOLOGY	3.00	A
		Transfer Hrs Earned:	27.00	

Semester:	IU GPA Hours:	42.00	GPA Points:	162.000
	Hours Earned:	42.00	GPA:	3.857
Cumulative:	IU GPA Hours:	42.00	GPA Points:	162.000
	Hours Earned:	42.00	GPA:	3.857

Spring Semester 1996-1997 Fort Wayne

Program : Arts & Sciences Undergraduate

Course		Title	Hrs	Grd
HIST-A	315	U.S. SINCE WORLD WAR II	3.00	A
Course Topic(s): U.S 1945-PRESENT				
JOUR-J	200	WRITING FOR MASS MEDIA	3.00	A

Semester:	IU GPA Hours:	6.00	GPA Points:	24.000
	Hours Earned:	6.00	GPA:	4.000
Cumulative:	IU GPA Hours:	48.00	GPA Points:	186.000
	Hours Earned:	48.00	GPA:	3.875

--- Record continued on next column ---

Fall Semester 1997-1998 Fort Wayne

Program : Arts & Sciences Undergraduate

Course		Title	Hrs	Grd
HIST-A	314	THE UNITED STATES 1917-1945	3.00	A
Course Topic(s): UNITED STATES 1929-45				

Semester:	IU GPA Hours:	3.00	GPA Points:	12.000
	Hours Earned:	3.00	GPA:	4.000
Cumulative:	IU GPA Hours:	51.00	GPA Points:	198.000
	Hours Earned:	51.00	GPA:	3.882

Spring Semester 1997-1998 Fort Wayne

Program : Arts & Sciences Undergraduate

Course		Title	Hrs	Grd
ENG-L	390	CHILDREN'S LITERATURE	3.00	A
JOUR-J	200	INTRO TO MASS COMMUNICATIONS	3.00	A

Semester:	IU GPA Hours:	6.00	GPA Points:	24.000
	Hours Earned:	6.00	GPA:	4.000
Cumulative:	IU GPA Hours:	57.00	GPA Points:	222.000
	Hours Earned:	57.00	GPA:	3.895

Fall Semester 1998-1999 Fort Wayne

Program : Arts & Sciences Undergraduate

Course		Title	Hrs	Grd
POLS-Y	215	INTRODUCTION TO LAW	3.00	A
PSY-P	250	ABNORMAL PSYCHOLOGY	3.00	A

Semester:	IU GPA Hours:	6.00	GPA Points:	24.000
	Hours Earned:	6.00	GPA:	4.000
Cumulative:	IU GPA Hours:	63.00	GPA Points:	246.000
	Hours Earned:	63.00	GPA:	3.905

Spring Semester 1998-1999 Fort Wayne

Program : Arts & Sciences Undergraduate

Course		Title	Hrs	Grd
COM	218	FUNDAMENTALS OF SPEECH	3.00	A
FOLK-K	100	INTRODUCTION TO FOLKLORE	3.00	A

Semester:	IU GPA Hours:	6.00	GPA Points:	24.000
	Hours Earned:	6.00	GPA:	4.000
Cumulative:	IU GPA Hours:	69.00	GPA Points:	270.000
	Hours Earned:	69.00	GPA:	3.913

Fall Semester 1999-2000 Fort Wayne

Program : Arts & Sciences Undergraduate

Course		Title	Hrs	Grd
ANTH-B	200	BIOANTHROPOLOGY	3.00	A
PHIS	105	INTRO ASTRONOMICAL PHYSICS	3.00	A
Course Topic(s): SOUND AND MUSIC				

--- Record continued on next page ---

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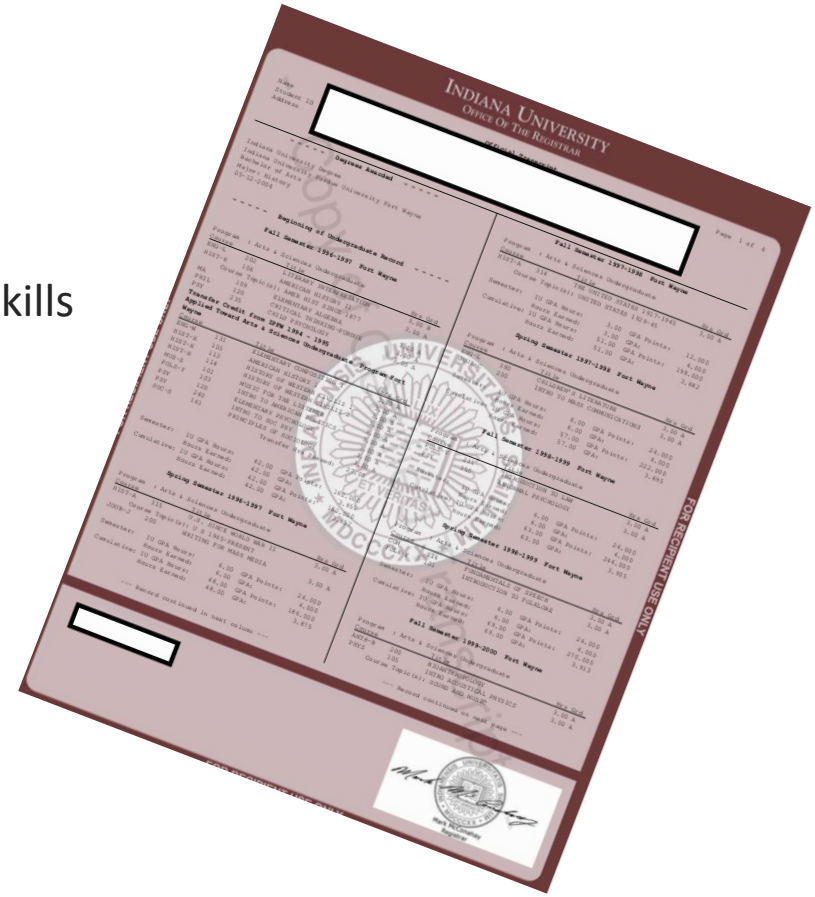
Mark McGinnahey
Registrar

FOR RECIPIENT USE ONLY

The Traditional Academic Transcript

- **External Trends**
  - BA minimum Career Credential
  - Grade Inflation
  - State/Federal Accountability
  - Labor Market and Professional Skills
    - Hard/Soft Skills
  - ***Differentiation?***



Expanded Grade Context Record

A1990s Attempt to Differentiate!

JPEG image 1018x610 pixels - Netscape

INDIANA UNIVERSITY
ACADEMIC RECORD
Grade Context Record

Name: SAMPLE, IU STUDENT
Student No.: 000-77-7772
Address: 3071 LIBRA LANE
CINCINNATI, OH 45251
High School: ANDERSON HS, CINCINNATI, OH

Record Date: 03-05-1998
Record Type:
Record Status: ACTIVE

GRADE CONTEXT INFORMATION

Descriptive Title	Dept	Crs	Hrs	Gr	Index	A+ P	A S	A- I/R	B+ W	B Other	B- Total	C+ Grades	C	C-	D+	D Majors	D-	F Avg.	Class Student	GPA GPA
BLOOMINGTON COL OF ARTS & SCI 1ST SEM 1997-98																				
AMERICAN SOCIAL WELFARE POLICY	POLS	Y326	3.0	A	24/56	0	24	22	3	2	0	2	0	2	0	1	0	0	3.61	
						0	0	0	4	3		63				41%			3.06	
CAPITAL PUNISHMENT	CJUS	P493	3.0	A+	6/26	6	9	8	1	0	2	0	0	0	0	0	0	0	3.78	
						0	0	0	0	0		26				85%			3.01	
THE VIETNAM WAR	HIST	A300	3.0	B+	56/321	3	10	14	29	84	29	23	56	18	6	20	5	24	2.36	
						5	0	2	39	10		377				12%			2.85	
CRIME IN THE NEW AMERICAN CITY	CJUS	P680	3.0	A	***/***															

CONTEXT EFFECTIVE DATE 01-28-1998

**********Index and grade distribution are not available**********
**********due to small class size.**********

Sem. Hrs. 12.0 Pts. 45.9 GPA 3.83 Hrs. Passed 12.0

Undergraduate GPA Summary

I.U. GPA Hrs. 12.0 GPA Points 45.9 GPA 3.83
Transfer Hrs. 0.0 Total IU Hours Passed 12.0

---ACADEMIC OBJECTIVE---
AS OF SECOND SEMESTER 1997-98
BLOOMINGTON CAMPUS
ARTS & SCIENCES
BACCALAUREATE, SPECIAL

---END OF RECORD---

ISSUED AT BLOOMINGTON CAMPUS
R. GERALD PUGH, REGISTRAR

This document is printed on a 1/2" X 14" crimson safety paper and is official if it bears the Indiana University seal with the registrar's signature. If the transcript is copied, the word "VOID" will appear in shadow outline on the face.

The issue of information contained in this transcript may not be made to another party without the prior written consent of the student whose name appears herein. This information may be used solely by the individual or institution to which it was originally released for the purpose for which the disclosure was made.

MAR 5 1998

OFFICE OF THE REGISTRAR
INDIANA UNIVERSITY

Technology Trends

- **Technology Trends**
  - Digital Records
    - Auto processing->ERPs->Cloud SaaS
    - ->Multi-Tenet
  - Connectivity
  - EDI/Trusted Networks
  - Digital Documents
  - Electronic Document Authentication
    - Adobe PKI standards
  - Badges/Certificates/micro-credentials
  - XML/Semantic Web
  - Public Ledger
  - Labor Market Consumption

The Traditional Academic Transcript Demand Trends

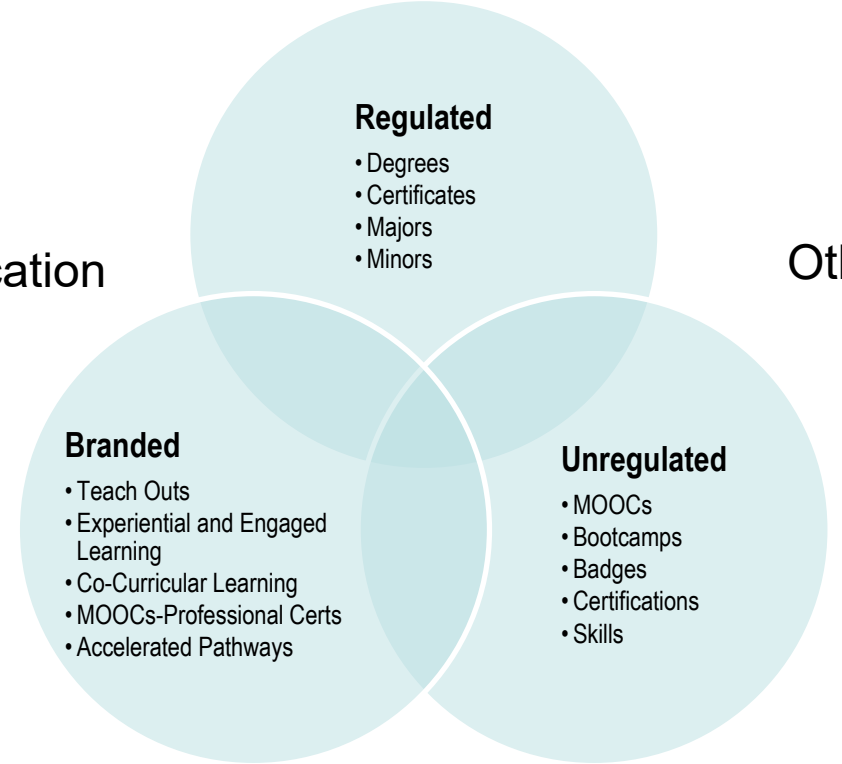
- **Diminished Demand**
  - Degree Verification Agency(ies)
  - Digital Record Exchange (EDI/XML)
  - Electronic rendering
    - Digital Signatures/PKI
    - Fewer Copies
    - Social Media (LinkedIn)
  - Other Credential Providers
  - Lack of Fidelity
  - Inability to Differentiate

The Need for More

- **The Rise of Alternative Records and Institutional Attestation**
  - Competency Based Education
  - Engagement and Experiential Learning
    - Community Engagement
    - UG Research
    - Leadership
  - Co-Curricular Records
    - Value of Participation
  - MOOCs/Badging
  - Learning Outcomes/Course Descriptions/Syllabi/Learning Artifacts
  - Non-Chronological Presentation
  - Course/Engagement Attestation

The Credential Conundrum

Higher Education Institutions



Other Providers

The Consumer Conundrum

© Can Stock Photo - csp8410151

Higher Education Institutions

Regulated

- Degrees
- Certificates
- Majors
- Minors

Non-Accredited Providers

Reg-Unregulated

- MOOCs-Professional Certs - Branded
- Accelerated Pathways
- Teach Outs
- Experiential and Engaged Learning

Unregulated

- MOOCs
- Bootcamps
- Badges
- Certifications
- Competencies
- Skills

Trust, Fidelity

The Comprehensive Learner Records (CLR) project and data integration

1. AACRAO and NASPA joined forces in 2015 to explore the future of digital student records
   - $1.5 Million Lumina Grant

2. Initial project allowed 12 institutions to develop models of these records
   - Learning outcomes
   - Competency-based education
   - Learning outside the class

The Comprehensive Learner Records (CLR) Project

Goals

i. Accelerate creation of comprehensive learner record.

ii. Develop framework for the development of these records.

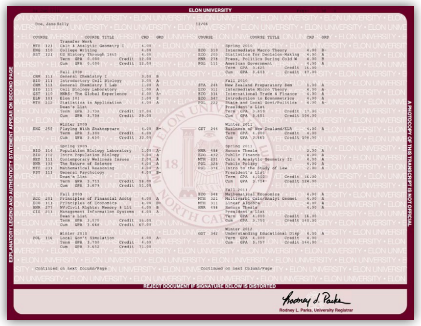
iii. Document the operational and policy considerations

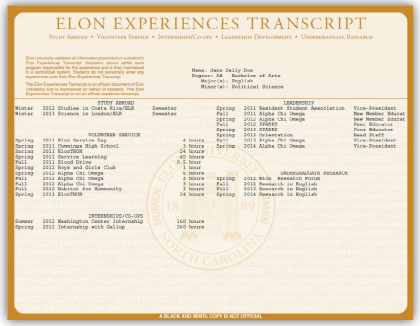
iv. Directly assist 12 institutions to develop:

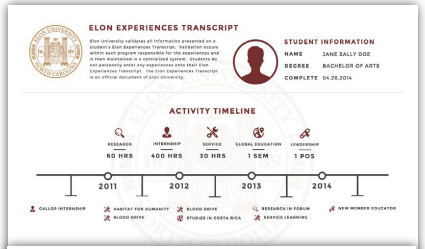
- Competency-based education
- Learning outcomes for programs/majors/degrees
- Co-Curricular learning records/outcomes

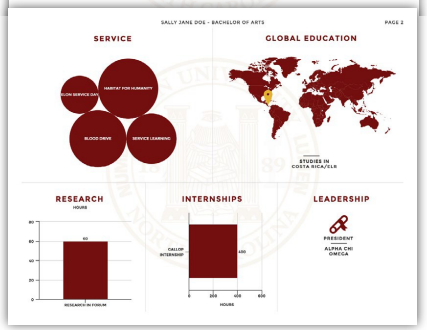
v. Provide record models for other institutions

The Comprehensive Learner Records (CLR)
Co-Curricular Records (Elon)

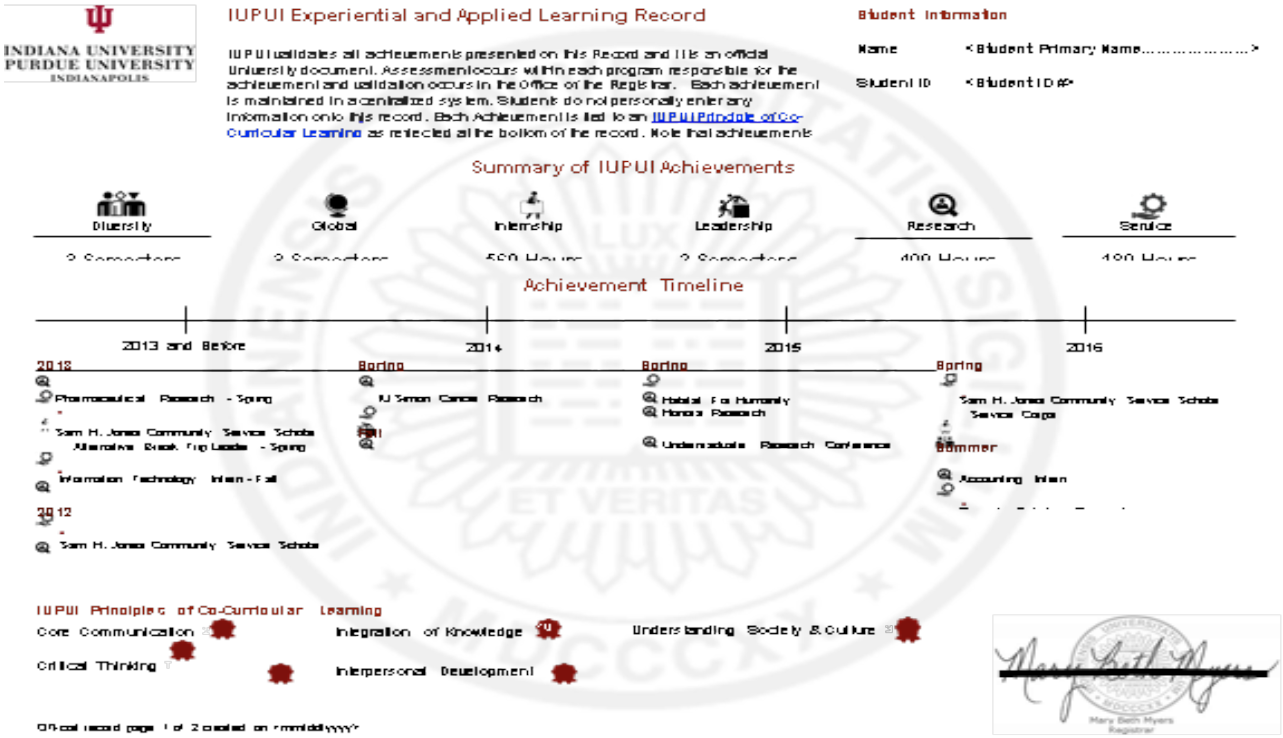








The Comprehensive Learner Records (CLR) Co-Curricular Records (IUPUI)



INDIANA UNIVERSITY
PURDUE UNIVERSITY
INDIANAPOLIS

IUPUI Experiential and Applied Learning Record

IUPUI validates all achievements presented on this Record and it is an official University document. Assessment occurs within each program responsible for the achievement and validation occurs in the Office of the Registrar. Each achievement is maintained in a centralized system. Students do not personally enter any information onto this record. Each Achievement is tied to an IUPUI Principle of Co-Curricular Learning as reflected at the bottom of the record. Note that achievements

Student Information

Name <Student Primary Name.....>

Student ID <Student ID #>

Summary of IUPUI Achievements

Diversity	Global	Internship	Leadership	Research	Service
2 Semesters	2 Semesters	500 Hours	2 Semesters	400 Hours	400 Hours

Achievement Timeline

2013 and Before | 2014 | 2015 | 2016

2013

Pharmaceutical Research - Spring

Sam H. Jones Community Service Schola

Alternative Break Trip Leader - Spring

Information Technology Intern - Fall

2012

Sam H. Jones Community Service Schola

Spring

IU Simon Cancer Research

Spring

Habitat For Humanity

Honors Research

Undergraduate Research Conference

Spring

Sam H. Jones Community Service Schola

Service Corps

Summer

Accounting Intern

IUPUI Principles of Co-Curricular Learning

Core Communication

Integration of Knowledge

Understanding Society & Culture

Critical Thinking

Interpersonal Development

Official record page 1 of 2 created on mmddyyyy

Mary Beth Myers
Registrar

The Comprehensive Learner Records (CLR) Co-Curricular Records (IUPUI)

Diversity

•Coordinator - Disability Awareness Week IUPUI, Indianapolis IN - 60 Hours
•Diversity Experience Title that takes up a really
whole lot of room on page
Someplace, Indianapolis Indiana - 50 Hours
•Multicultural Leadership Empowerment Program
40 Hours
•Diversity Experience Title #2 takes up a really whole lot of room on page
Somewhere, IL - 35 Hours
•experience info ……>
<city, state/province/territory, country> - 2 Semesters

Global Engagement

Cultural Experience #00000000000000000000 - International Fisherman Niger's Capital, Agadez NER - 3 Semesters

Internships

•Information Technology Intern MISO, Carmel IN USA - 780 Hours
•Accounting Intern
Eli Lilly, Indianapolis IN USA - 560 Hours

Leadership

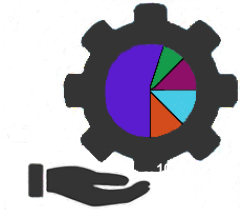
•Fraternity Treasurer, Phi Delta Theta IUPUI Indianapolis IN USA - 4 Semesters
•Fraternity Vice President, Phi Delta Theta IUPUI, Indianapolis IN USA - 2 Semesters

Research Hours

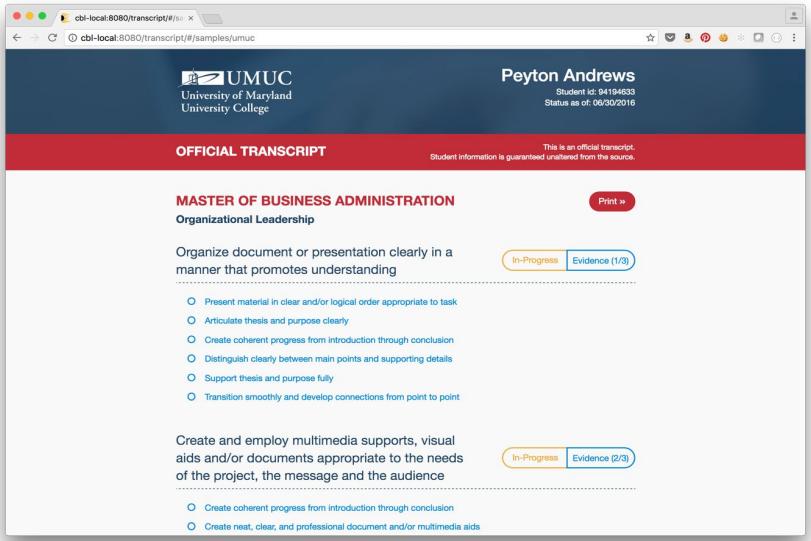
255
195
135
55

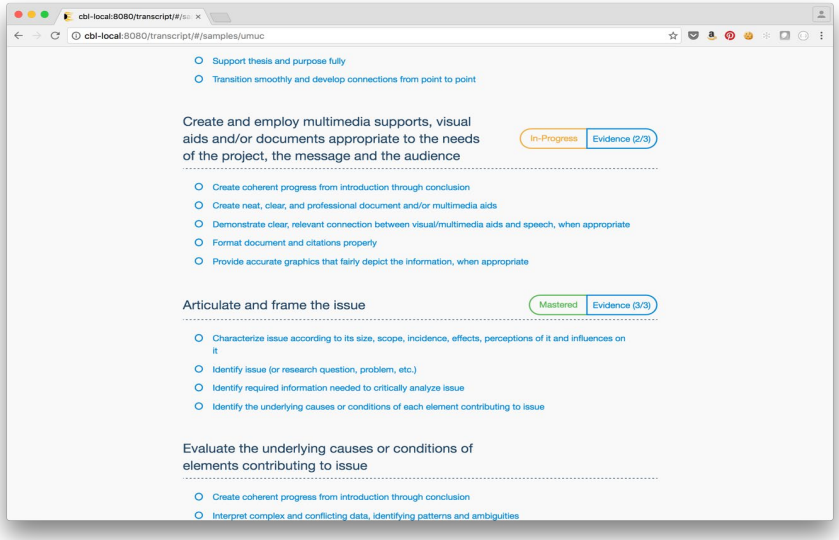
Family, School &
Multidisciplinary Undergraduate Research Institute
Community Service Scholars
Undergraduate Research Opportunity Program
Some Other Research Program
Community Service Scholars

Co-Coordinator
Official record page 2 of 2 created on <mm/dd/yyyy> for <student name> <student ID>

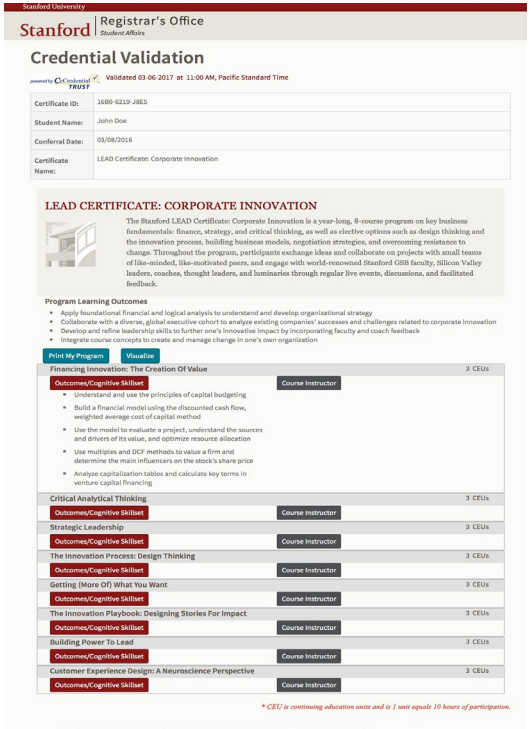


The Comprehensive Learner Records (CLR) Competency Based Records





The Comprehensive Learner Records (CLR) eCertificates



The Comprehensive Learner Records (CLR) Project

Major Findings

I. **Learning Frameworks**
   I. Governance and Culture
II. **Lifelong Access to Student Record**
   I. Student Lockers
III. **Standardization of Record and Data Formats**
   I. Diploma (PESC)
   II. CLR (IMS Global)
   III. Competencies (CASE)
IV. **Data integration**
   I. Culture for Change
   II. Identification of Repositories
   III. Resources

The Comprehensive Learner Records (CLR) Project II

Goals of Second Lumina Grant

i. **CLR Traction and Scale**
   i. 150 Institutions
   ii. Address Standardization Issues

ii. **Address Competency Based Education Challenges**
   ii. Identify and Resolve Issues
   iii. Publish Guidance
   iv. Establish Standards

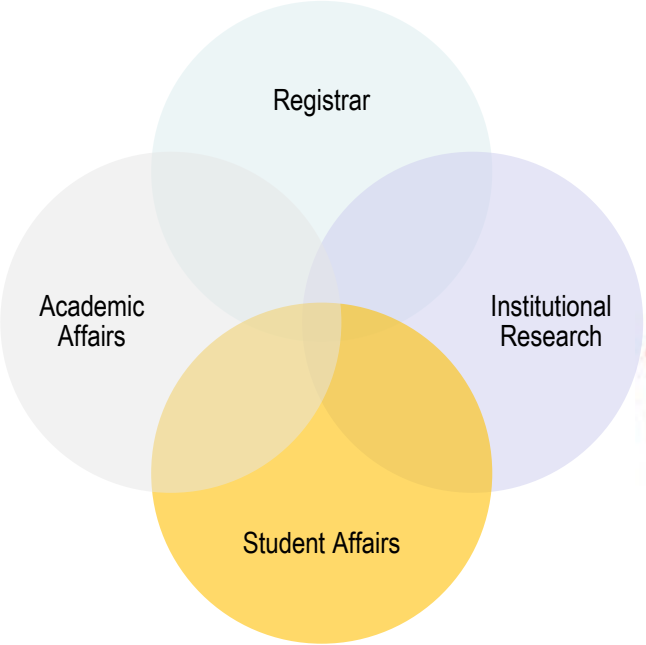
iii. **Data Integration Issues**
   ii. Identify Issues
   iii. Publish alternative methodologies

iv. **Degree Audit and Experiential Learning**
   ii. How can Degree Audit tools be utilized for Experiential requirements

So What Makes Data Integration So Difficult?

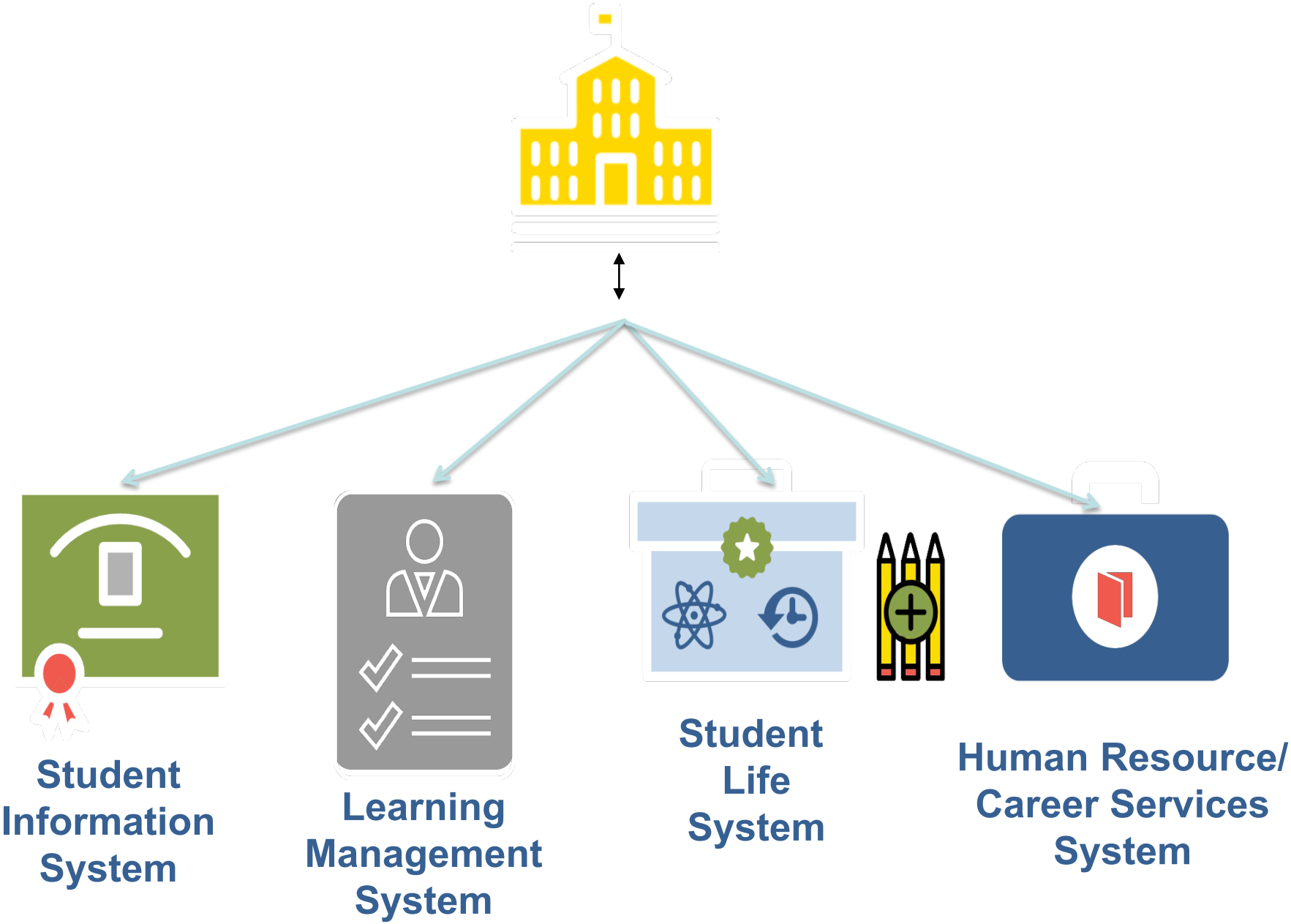
People

Shared Use Case(s)



Cross-institutional Buy-in

Staff Capacity and Bandwidth

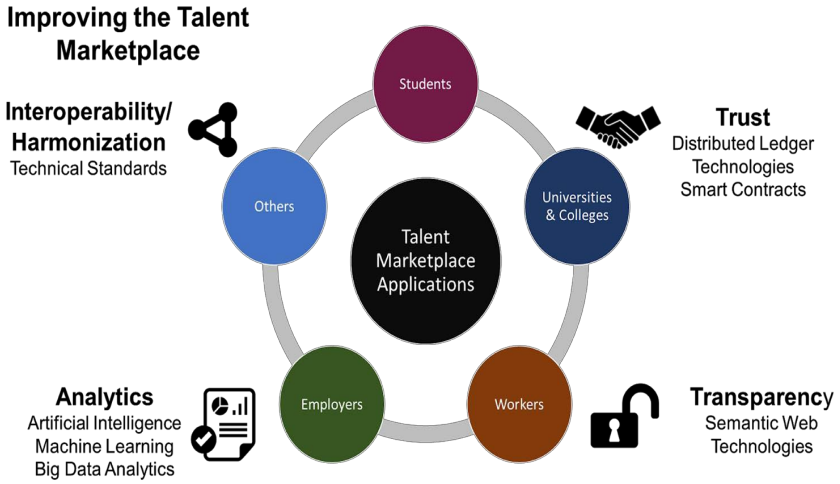

Student Information System
Learning Management System
Student Life System
Human Resource/ Career Services System

Meanwhile – on the Demand Side

USCCF T3 Innovation Network

I. Improve Talent Marketplace and ecosystem
II. Leverage Technology
    Web 3.0 (Semantic Web, AI, etc.)
    Distributed Ledgers (Blockchain)
III. Improve Interoperability
    Competencies and credentialing
    Standards

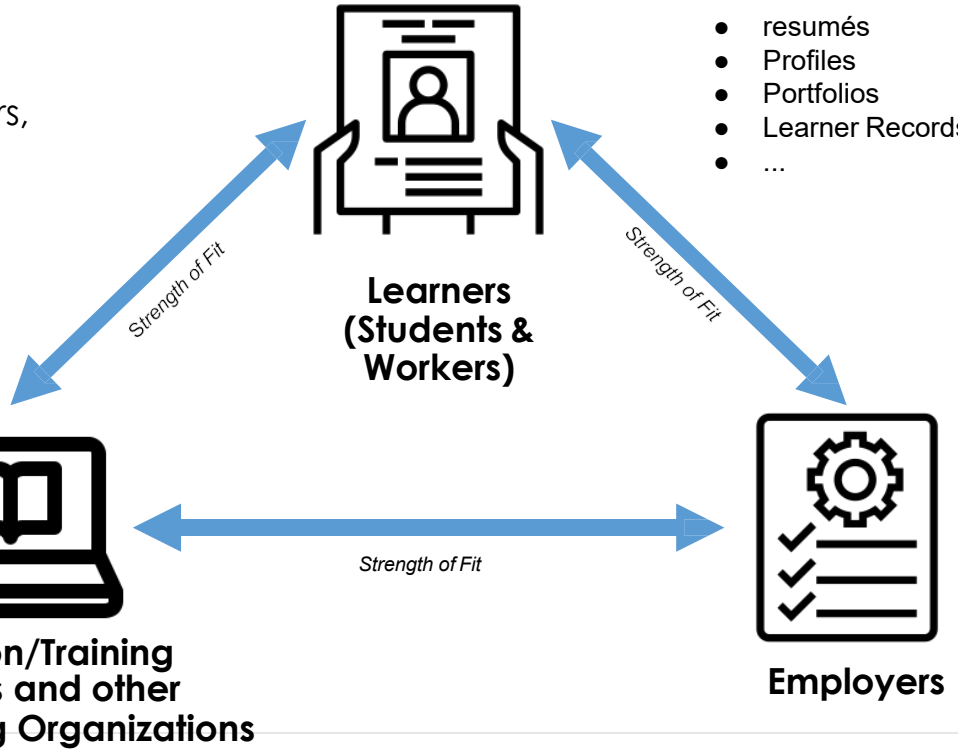
From USCCF



Work Group 3

Fundamental Challenge:

Assessing fit of competencies within and between employers, education and training providers / credentialing organizations and learners.

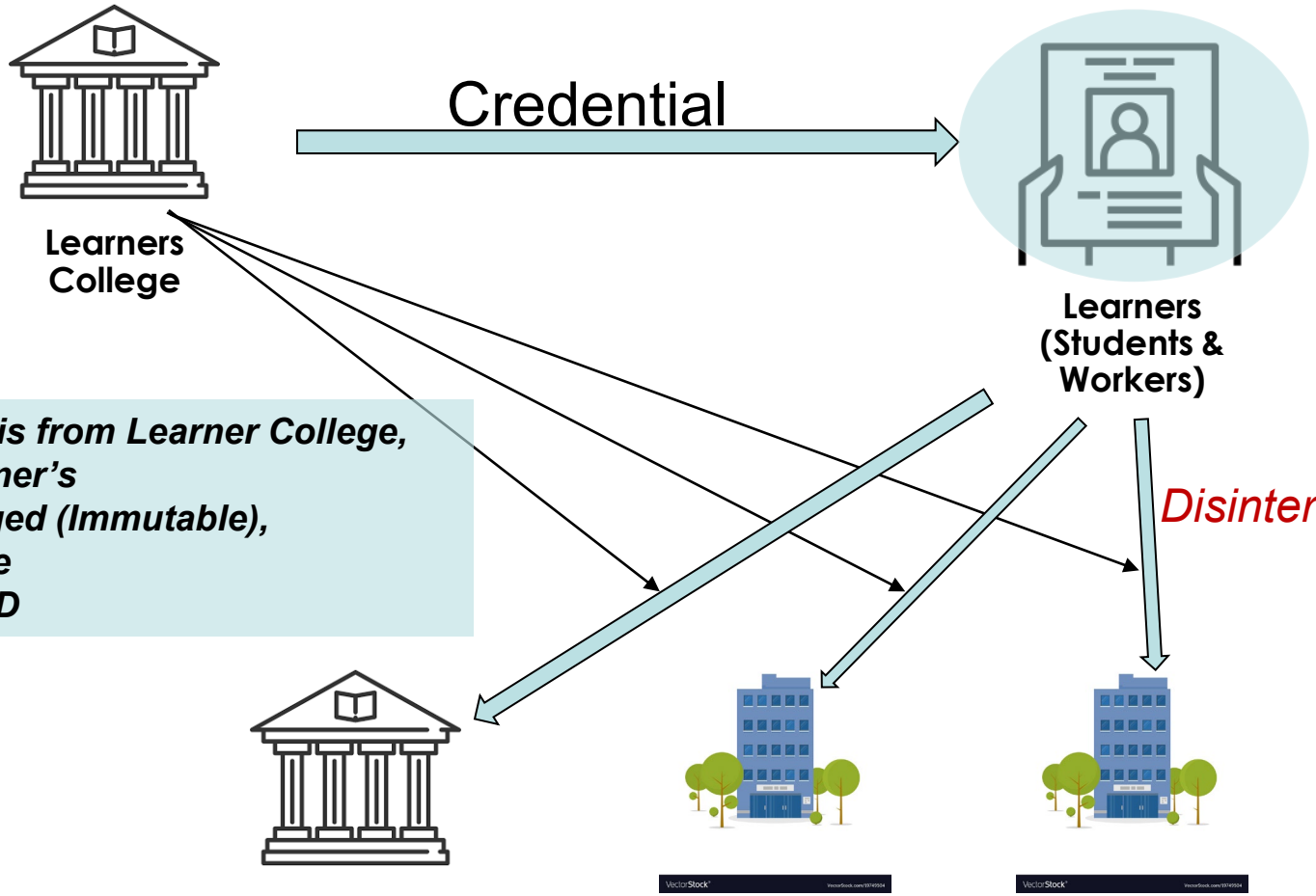


- resumés
- Profiles
- Portfolios
- Learner Records
- ...

- Course Catalogs
- Websites
- Assessment Blueprints and Handbooks
- Badging Systems
- Student Information Systems
- ...

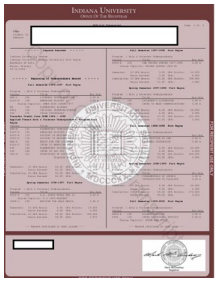
- Job Profiles, Descriptions and Listings
- Training and Assessments
- Credentials Issued
- Performance Information
- ...

Student Self-Sovereignty



Credential is from Learner College,
is the Learner's
Is Unchanged (Immutable),
Is Verifiable
Is TRUSTED

So – What is a Credential?



Courses

-Description
-Learning Outcomes
-Syllabus
-Learning Artifact
-Assessment Rubric

Competencies

-Description
-Learning Outcomes
-Syllabus
-Learning Artifact
-Assessment Rubric

Engagement Activities

-Description
-Learning Outcomes
-Learning Artifact
-Assessment Rubric

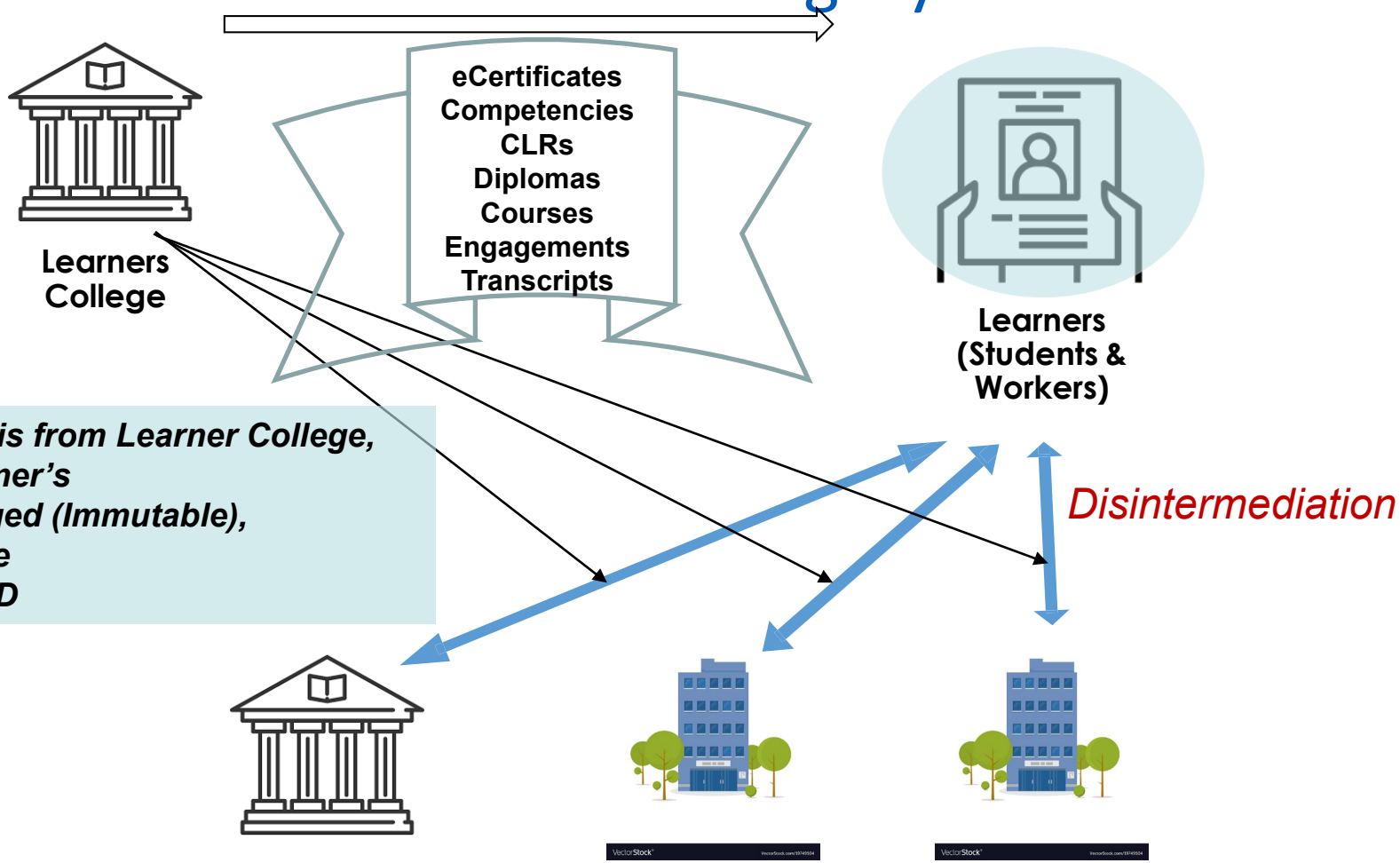
Current Landscape

	Academic Transcript	Co-Curricular Transcript	Competency Transcript
Governance	Curricular	Engagement	Competencies/Skills
Data Source	SIS	SIS/Other	SIS/Other
Units	Courses/ Programs/Hours	Experiences/ Engagements/ Activity	Competencies/ Completions
Details	Titles/Grades/GPAs	Descr/Assessment Learning Outcomes	Assessments Achievements
New Features	Descrs/Syllabi/ Learning artifacts/etc. New summary Stats	Meta-data/ Learning Artifacts	Learning Artifacts
Awards	Certificates Degrees	Certificates "Achievements"	Certificates Degrees
Rendered	Chronological Ledger	Chronological Ledger Visual	Chronological
Modality	Printed eDoc (PDF) **eCert/Badge**	Printed eDoc (PDF) **??**	Printed eDoc (PDF) **eCert/Badge**
Standards	EDI/XML Credit Hours	**??** ??	**??**
Characteristics	Academic Value Attestation/Trust Brand and Source Integrity (Immutable) Interoperability (in HE)	Academic Value Attestation/Trust Brand and Source Integrity (Immutable)	Academic Value Attestation/Trust Brand and Source Integrity (Immutable)
Limitations	Obscurity (beyond HE) Fidelity Inflexibility Indivisibility	Inflexibility Indivisibility	Fidelity Inflexibility Indivisibility

	Academic Transcript	Co-Curricular Transcript	Competency Transcript
Governance	Curricular	Engagement	Competencies/Skills
Data Source	SIS	SIS/Other	SIS/Other
Units	Courses/ Programs/Hours	Experiences/ Engagements/ Activity	Competencies/ Completions
Details	Titles/Grades/GPAs	Descr/Assessment Learning Outcomes	Assessments Achievements
New Features	Descrs/Syllabi/ Learning artifacts/etc. New summary Stats	Meta-data/ Learning Artifacts	Learning Artifacts
Awards	Certificates Degrees	Certificates "Achievements"	Certificates Degrees
Rendered	Chronological Ledger	Chronological Ledger Visual	Chronological

eCertificates/Badges

Student Self-Sovereignty



Credential is from Learner College,
is the Learner's
Is Unchanged (Immutable),
Is Verifiable
Is TRUSTED

Resolving the Credential Conundrum

Standards

I. Expanded Core Academic Record

a) Learning Outcomes, competencies, syllabi, descriptions, requirements, etc.

b) Learning Artifacts -> Differentiation

II. Redefine fundamental currency

a) Each course/engagement/etc. render as credential

b) Include meta-data defining unit

   a) E.g., Learning outcomes

c) Student specific assessments/artifacts

d) Element Standards

Resolving the Credential Conundrum

Standards and Protocols

III. Integrity and Trust

a. Security and Trust

IV. Interoperability

a) Identity Issues
b) Aggregation (by learner and consumer)
c) Platforms/Protocols - Supply and Demand side

V. Roadmaps

a) Authority

Accredited, Regulated, Signatory

b) Certificates -> Badges
c) Learner outcomes -> skills

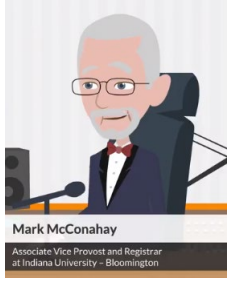
AACRAO

Advancing Global Higher Education

The Future of the Academic Record and how Technology, and AACRAO, and all or you are Intertwined.

Mark McConahay

Associate Vice Provost and Registrar

Indiana University

Vice President Information Technology, AACRAO