

Digital Credentials Consortium

Kim Hamilton Duffy, MIT
Matt Lisle, Georgia Tech
Brandon Muramatsu, MIT



Digital Credentials Consortium Mission

Our mission is to create a trusted, distributed, and shared infrastructure that will become the standard for issuing, storing, displaying, and verifying academic credentials, digitally.

Get the whitepaper: bit.ly/DCCWhitepaper



DCC Founding Members

Delft University of Technology (The Netherlands)

Georgia Institute of Technology (USA)

Harvard University (USA)

Hasso Plattner Institute, University of Potsdam (Germany)

Massachusetts Institute of Technology (USA)

McMaster University (Canada)

Tecnológico De Monterrey (Mexico)

Technical University of Munich (Germany)

University of California at Berkeley (USA)

University of California, Irvine (USA)

University of Milano-Bicocca (Italy)

University of Toronto (Canada)



DCC Guiding Principles

Learners

- **Learners retain primary control over their credentials.**
- Learners' consent is required for issuance of digital credentials
- Learners decide to whom they grant access.
- Barriers to receiving and managing credentials are minimal to enable broad participation.

Issuers

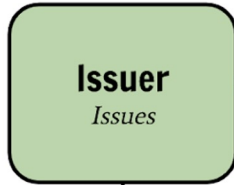
- Issuers control to whom they issue credentials, the particular achievement that the credential represents, and which credential options are available to the learner.
- Issuers can revoke credentials according to their institution's policies.
- Barriers to issuing credentials are minimal to enable broad and diverse participation.

Trust: Everyone is able to review how the infrastructure and processes work.

- **Trust in the integrity of the credentials is established cryptographically.**
- Credentials can be verified without consulting the original issuer

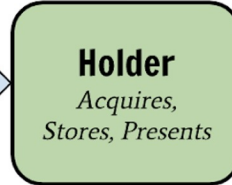
Verifiable Credentials Ecosystem

“College / University”
“Registrar”



Issue
Credentials

“Learner”
In a “Wallet”



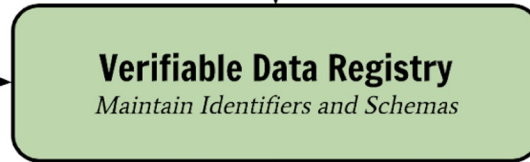
Send
Presentation

“Employer”
“Graduate School”



Register
Identifiers and
Use Schemas

Verify Identifiers
and Use Schemas



Verify Identifiers
and Schemas

“National Organization”

A **DCC-compatible Credential** is a W3C Verifiable Credential (tamper-evident credential where the authorship can be cryptographically verified) that meets the technical and policy specifications adopted by the DCC.



MIT xPRO Pilot



MIT xPRO

MIT xPRO offers online professional education programs designed to help working professionals build their skills on the job.

Programs and courses include:

- [Systems Engineering](#)
- [Quantum Computing](#)
- [Leadership Principles for Scientists, Engineers and Researchers](#)
- Big Data, Additive Manufacturing, Machine Learning

Issues course and program certificates.

~50,000 learners, 94% of whom earned certificates.

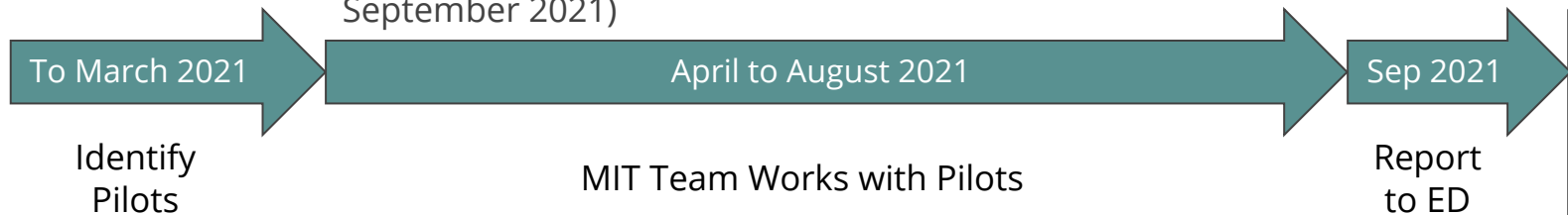


MIT and U.S. Department of Education Digital Credential Project



MIT-ED Digital Credential Project Goals

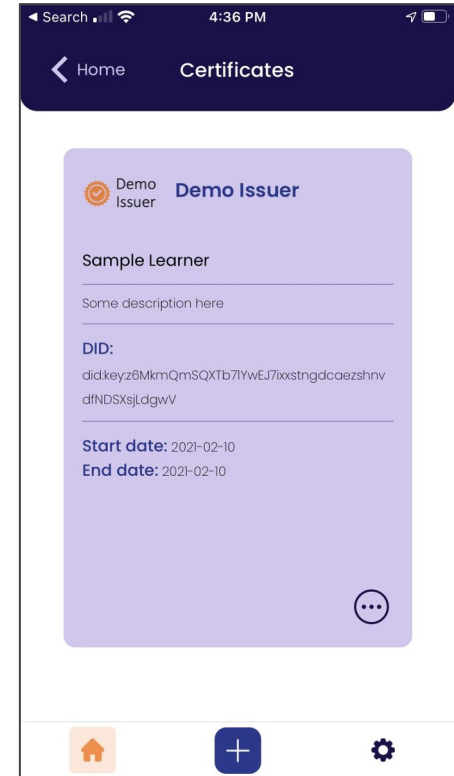
- U.S. Department of Education contract to MIT to develop an open Student Wallet draft standard and implementation
 - MIT's work builds on DCC activities and is a reference implementation of them
- Deliverables
 - Open Source (Draft) Standard for Student Wallet (March 2021)
 - Reference Implementation of the Open Standard (April 2021)
 - 2-3 higher education pilots ("deployments"), support, and analysis (May-September 2021)





Current Status

- Deployment to app stores imminent
- Core flows to request/receive with proof-of-control identifier
- Contributing to Universal Wallet Interop Specification and Reference Implementation
- Compatibility with a Broad Range of Digital Wallets





Georgia Tech LMS Issuer (LTI)



LMS Issuer

- Shout out to Stuart Freeman!
 - ... and front-end support from Chris Yang!
- GitHub repos: cred-admin and lti-issuer
- IMS Global:
 - lti-issuer adheres to the LTI standard
 - Credentials are Open Badges wrapped in VC
- Leverages past work building a Blockcerts Admin application
- Upcoming pilots will also use the Open Source Wallet
- UX research (Shout out to Sonam Singh):
 - Fall 2020 - conducted interviews with faculty and students using wireframes
 - Spring 2021 - usability tests with an MVP

dfreeman31 20190221 > Modules 63 Student View

Home Collapse All View Progress + Module ⋮

Announcements 🔊

Assignments

Discussions

Grades

People

Pages 🔗

Files 🔗

Syllabus

Outcomes 🔗

Rubrics

Quizzes

Modules

Conferences

Collaborations

Attendance

Chat

SCORM

Piazza

My Media

Media Gallery

Office 365

BlueJeans

GT Bookstore

TurningPoint

LockDown Browser

CIOS

Badges

Well-Being Connect

GT Apps Labs

Roster Editor

Mental Health Resources

DEV

Jr Iconographer Complete One Item ✓ + ⋮

Insects
2 pts | Score at least 2.0 ✓ ⋮

Credential Prerequisites: Jr Iconographer ✓ + ⋮

Add Item to Credential

Add External Tool to Credential

Select a tool from the list below, or enter a URL for an external tool you already know is configured with Basic LTI to add a link to it to this module.

- GT Cred**
Award Verifiable Credentials to students.
- Dropbox**
This lightweight integration lets Dropbox users select and link to files within course content or in conjunction with homework submissions. Dropbox is a file hosting service offering cloud storage, file synchronization, and client software. Files placed in a...
- educreations**
Teacher-recorded whiteboard sessions
- Examiity**
- Films On Demand**
Search available Films On Demand videos. A new icon will show up in your course rich editor letting you search Films On Demand and click to embed videos in your course material.
- Flat World Knowledge**

URL:

Page Name:

Load in a new tab

Indentation:

Cancel Add Item

- Home
- Account
- Admin
- Dashboard
- Courses
- Groups
- Calendar
- Inbox
- History
- Commons
- Help

```
{"contextId":"be52d7d7a51a757fc888ba868267d4f36046b2ef","userId":"b4223aa3dcb4e4fba61f8970ff85ca22e1fe1ca","userRole":"instructor"}
```

GT Cred

GT It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpose (injected humour and the like).

Select a Credential

- Iconographer Badge
- Iconographer Badge
- + Create Credential

- Announcements
- Assignments
- Discussions
- Grades
- People
- Pages
- Files
- Syllabus
- Outcomes
- Rubrics
- Quizzes
- Modules
- Conferences
- Collaborations
- Attendance
- Chat
- SCORM
- Piazza
- My Media
- Media Gallery
- Office 365
- BlueJeans
- GT Bookstore
- TurningPoint
- LockDown Browser
- CIOS
- Badges
- Well-Being Connect
- GT Apps Labs
- Roster Editor
- Mental Health Resources
- DEV

- Account
- Admin
- Dashboard
- Courses
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- History
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- Help

{ "contextId": "be52d7d7a51a757fc888ba868267d4f36046b2ef", "userId": "b4223aa3dcb4e4fba61f8970ff85ca22e1fe1ca", "userRole": "instructor" }

- Home
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Create GT Cred

Here you can create a GT Cred

Title

Description

Criteria

Issuing Department


0.5.1


-  Account
-  Dashboard
-  Courses
-  Calendar
-  Inbox
-  History
-  Help


- Home
- Assignments
- Discussions
- Grades
- People
- Syllabus
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- Mental Health Resources




Collapse All

▼ Jr Iconographer Complete One Item

 **Insects**
2 pts | Score at least 2.0

▼ Credential Prerequisites: Jr Iconographer 

 GT Cred

-  View Course Stream
-  View Course Calendar
-  View Course Notifications

To Do
Nothing for now



Account



Dashboard



Courses



Calendar



Inbox



History



Help

Home

Collapse All

Assignments

Discussions

Grades



People

Syllabus

Quizzes

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Mental Health Resources

Jr Iconographer

Complete One Item



Insects

2 pts | Scored at least 2.0

Credential

Prerequisites: Jr Iconographer



GT Cred

View Course Stream

View Course Calendar

View Course Notifications

To Do

Nothing for now

Recent Feedback

Insects

2 out of 2

- Home
- Account
- Dashboard
- Courses
- Calendar
- Inbox
- History
- Help

```
{ "contextId": "be52d7d7a51a757fc888ba868267d4f36046b2ef", "userId": "1349ef2e54555dd4ab9fe1f14e99124a6c48da4b", "userRole": "learner" }
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Claim GT Cred

Advanced Credential

This certifies that the recipient has completed the credential Advanced Credential

Criteria:

- Show up
- Try your best
- Be cool

Status: **Complete**

You can now claim this credential by scanning the QR code below or by clicking [here](#)



cred-admin api ^{1.0}

[Base URL: /]
</api-docs/swagger.json>

Schemes
HTTPS ▾

Authorize

Recipient ▾

GET /api/recipients/ Get recipient

POST /api/recipients/ Create recipient

Credential ▾

GET /api/credentials/ Get Credentials

POST /api/credentials/ Create Credential

Issuance ▾

GET /api/issuances/{credentialId} Get Issuances

POST /api/issuances/{credentialId} Create Issuance

Group ▾

GET /api/groups/ Get Groups

POST /api/groups/ Create group

POST /api/groups/{gid}/{uid} Add a User to a Group

Enroll ▾

GET /api/enroll/{issuanceId} Get Enrolled Recipients

POST /api/enroll/{issuanceId} Enroll Recipients to an Issuance

User ▾

POST /api/users/ Create user

Models ▾



W3C Verifiable Credentials for Education



About the W3C CCG

- Standards Incubation
- Broader charter, draft standards, but not SDO
 - Create draft standards and work with SDOs that can help bring the specs to maturity
 - Solidify with reference implementations, use cases
- Responsible for
 - Verifiable Credentials
 - Decentralized Identifiers
 - Universal Wallet Interop Spec
 - And more



W3C CCG VC-EDU Approach

- Focus:
 - Use of Verifiable Credentials and related standards in educational use cases
 - Bridge to existing educational (and workforce) data standards
 - Conceptual alignment
 - How decentralized identity methods can be used with existing standards and systems

- Current work items
 - [VC-EDU Use Cases](#)
 - [VC-EDU Models](#)

Standards Class	Approach	Standards we are Considering
VC in Education Standards	Provide baseline interoperable standard for VC-Ed; ideally other VC-Ed standards should be extensions of this. Cause minimum disruption to existing large-scale implementations.	<ul style="list-style-type: none">● Europass
Credential System Standards	Allow for these standards to be semantically interoperable with VCEd standards.	<ul style="list-style-type: none">● IMS Open Badges● PESC● CLR● HROpen
Vocabulary Standards	Use existing vocabularies from these standards if and when they are suitable for purpose.	<ul style="list-style-type: none">● CTDL● schema.org● Europass Code Lists
Best Practices / Principles Standards	Use these to inform our approach in line with best practices and possibly enrich best practice.	<ul style="list-style-type: none">● ILR/LER Wrapper



Questions?

Backup



Envelope/Payload

