



Welcome to #WCETWebcast

October 19, 2017

- *The webcast will begin shortly.*
- *There is no audio being broadcast at this time.*
- *An archive of this webcast will be available on the WCET website next week.*

Welcome!

- *Use the question box for questions and information exchange.*
- *Archive and resources available next week.*
- *PowerPoint can be downloaded in the handouts pane.*
- *Follow the Twitter feed: #WCETwebcast.*



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Learn About Being Digitally Inclusive: A Conversation with WCET'S Digital Inclusion Award Winner

October 19

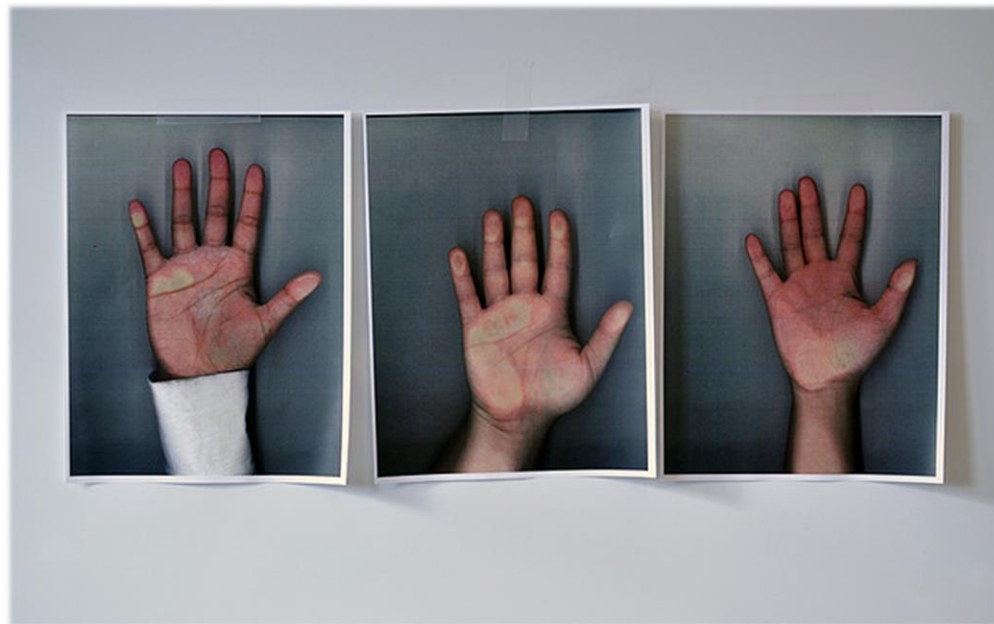


Overview



Questions from the Audience

- *If you have a question during the presentation, please add your questions to the question box.*
- *We will monitor the question box and have time for Q&A at the end of each section.*



Moderator

Andriel Dees

- Director, Diversity and Inclusion,
- Capella University



Speaker

Nader Vadiiee

- Faculty/Coordinator, Engineering and Engineering Technology Programs,
- Southwestern Indian Polytechnic Institute (SIPI) - A National Indian Community College



CLOSING THE CIRCLE!

INNOVATIVE STEM PROGRAMS

EMPOWER

NATIVE AMERICAN STUDENTS

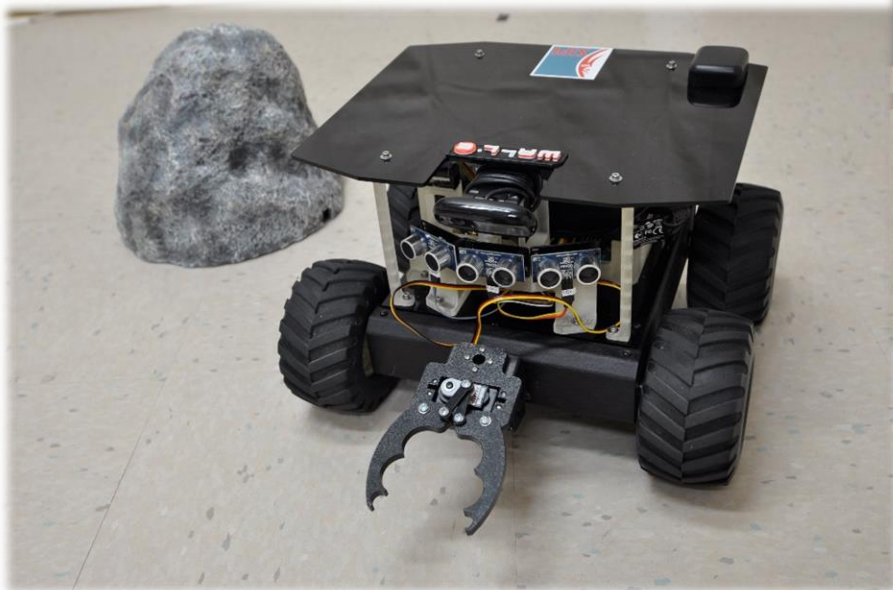
Student Body

- National Community College.
- Federally funded.
- More than 70 tribes represented.
- Open Enrollment.
- Average age 24-25.
- 70% entering with a math and science of 8th grade level.
- First generation college.
- Ties with community.

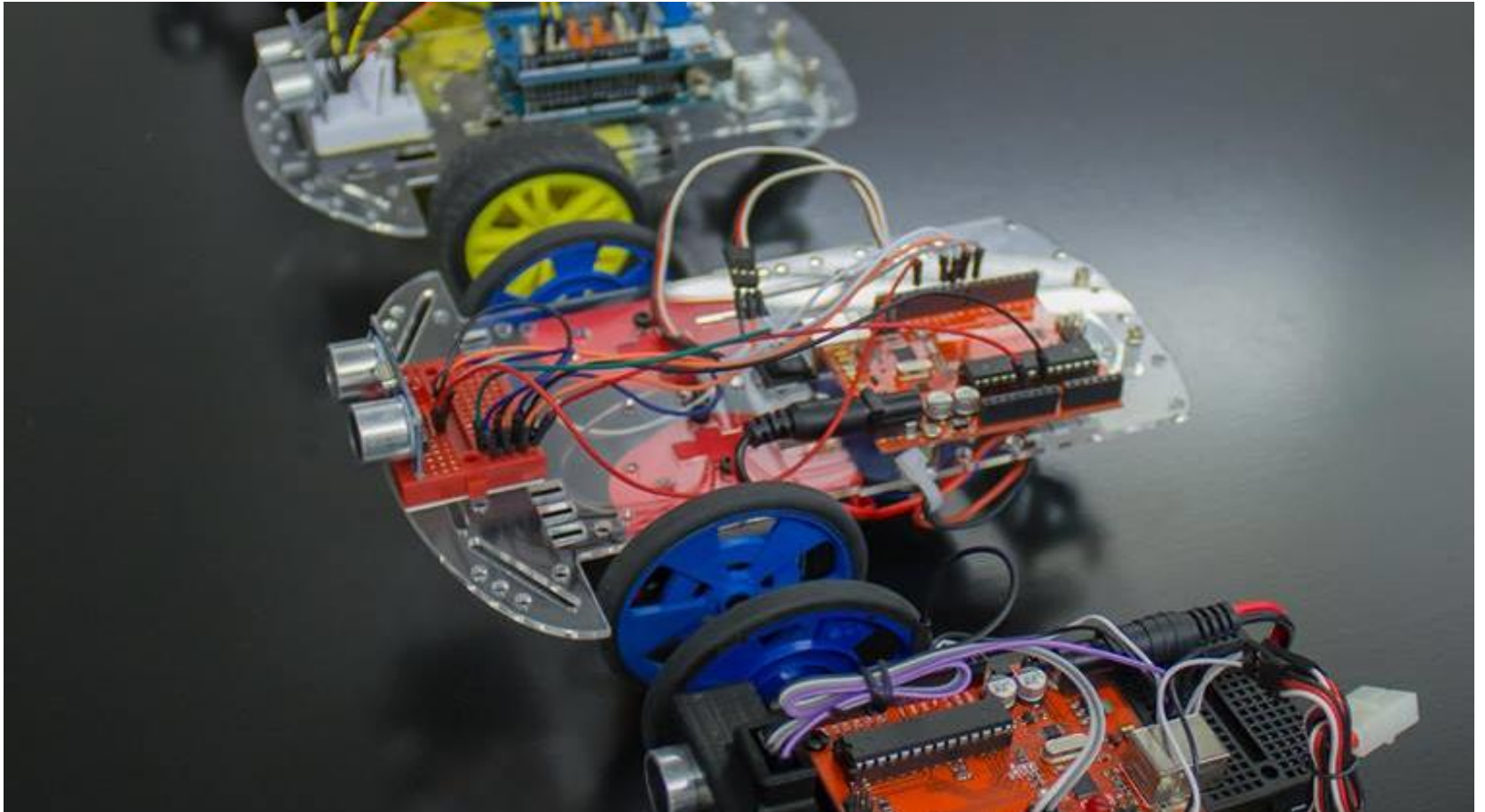
Our Vision

- 1 – Fair, Equitable, and Win-win Partnerships with the Mainstream Colleges.
- 2 – Capacity building on TCU Campuses.
- 3 – Sharing Resources among TCU's.
- 4 – Sustainable Programs.

Innovative Outreach & Recruitment



Roadrunner Series



Easy-VR Rover



ROV-S Recruitment & Outreach Vehicle



I-C-MARS Rose Stems!



SIPI I-C-MARS PROJECT

Funded by a NASA TCU-ELO Grant

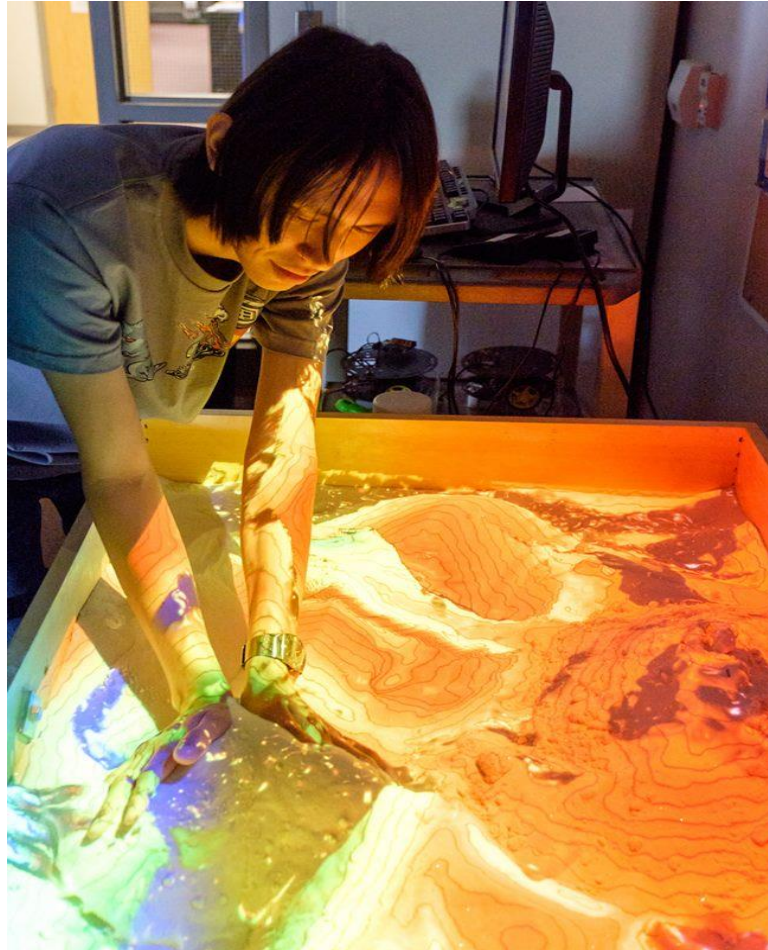
I-C-MARS Rose Stem Lab



Virtual Reality Tours



Augmented Reality Sandbox



VIP Rose Stems Teams



Four Phases of the ICMARS Project

- Phase I: Course, Curriculum, and Laboratory Development in space Science and technology.
- Phase II: Virtual I-C-MARS Missions.
- Phase III: Physical I-C-MARS Missions.
- Phase IV: I-C-MARS Community: User- Sourced Virtual and Physical Missions

Seven World Model Paradigms

- 1 - Linguistic (Natural Language) or Words.
- 2 – Numerical, Look-up Tables, Data Bases, statistical.
- 3 – Graphical, Animation, Video, and Multi-media.
- 4 – Analytical , Logical, Mathematical Model.
- 5 – Computational, Computer Simulation, Games.
- 6 – Physical , Experimental, Analog Simulation.
- 7 – Intuitional, Mental.

Paradigm shifts in Engineering Education:

Energy, Environment, New Materials, Computational Tools, Information Access, Communication

Seven-step I-C-MARS Development

- 1 - List of the competencies in the seven paradigms of knowledge representation along each the four phases. Spiral of Skills.
- 2 - List of the standards and outcomes corresponding to each competency.
- 3 - List of the activities and I-C-MARS virtual and physical “missions” for each outcome.
- 4 - List of the supplies, equipment, and vehicle platform for each activity.

Seven-step I-C-MARS Development Cont.

5 - Curriculum, syllabus, lab. or activity procedure, standard manuals and activity books, kits, rovers, drones, and in-service teacher professional development.

6 - List of the standard supplies, equipment, GUI, for each high school or TCU partner at each of the four phases.

7 - Documentation, Data Collection, Evaluation, Assessment, Information Dissemination.

Innovative Program Models

1 - Safety Net Certificate Programs.

2 – Multiple-Exit and Multiple-Entry Point.

3 – 1 + 1 + 2 + 2 Curriculum Structure.

4 – Four Capstone courses:

a - Intro to Engineering Sciences and Design,

b – Design Project,

c – Internship,

d – Special Topics Course.

Seven Pillars Of Research Experience

1- Understanding the Relevance of Math, Physical and Social Sciences, and Computational tools to Engineering and Engineering Technology Research and Development.

2 – Acquiring Soft Skills, creative and critical thinking, life-long learners, teamwork, time and resource management, communication, etc.

3 – Exposing to Career and Professional Opportunities.

4 – Mentoring and Tutoring opportunities, VIP structure.

Seven Pillars Of Research Experience (cont.)

- 5 – Learning New and Cutting Edge Research and Development in the Field.
- 6 – Cross-disciplinary team projects.
- 7 – Community-based Research and Development (Renewable Energy, Sustainability, Construction Engineering, Mars Yard, Summer TCU Engineering Institute, etc.)

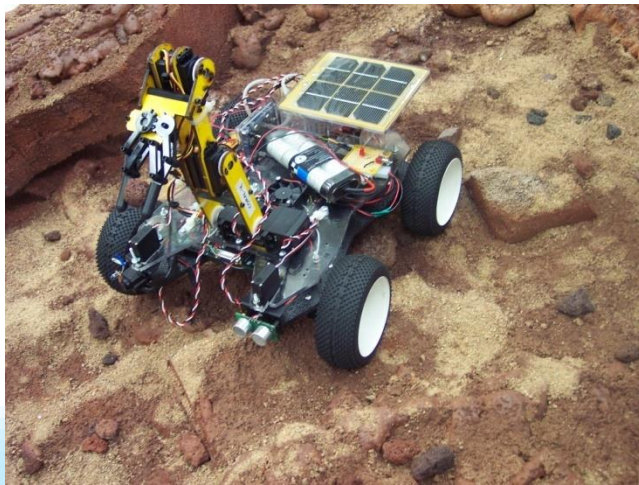
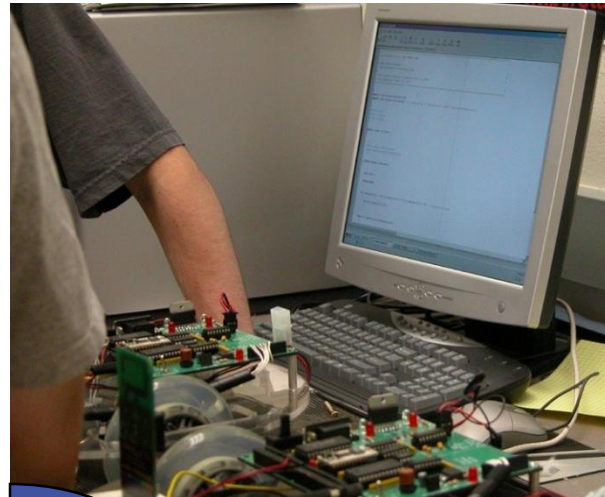
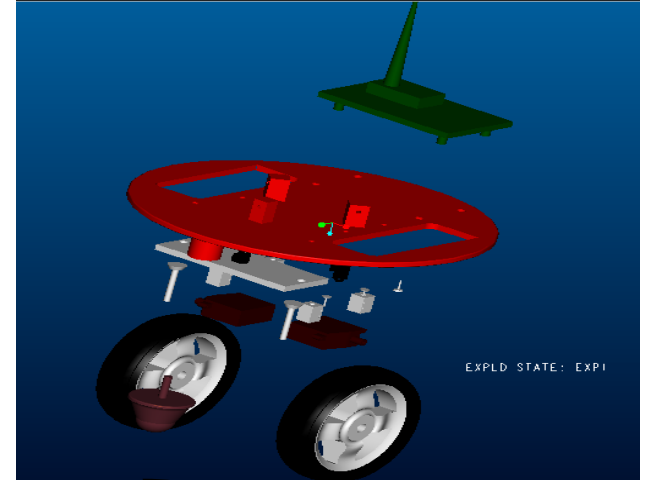
Problem-based Learning



SIGN UP NOW !
Fall 2014 Trimester !

ENGR 105

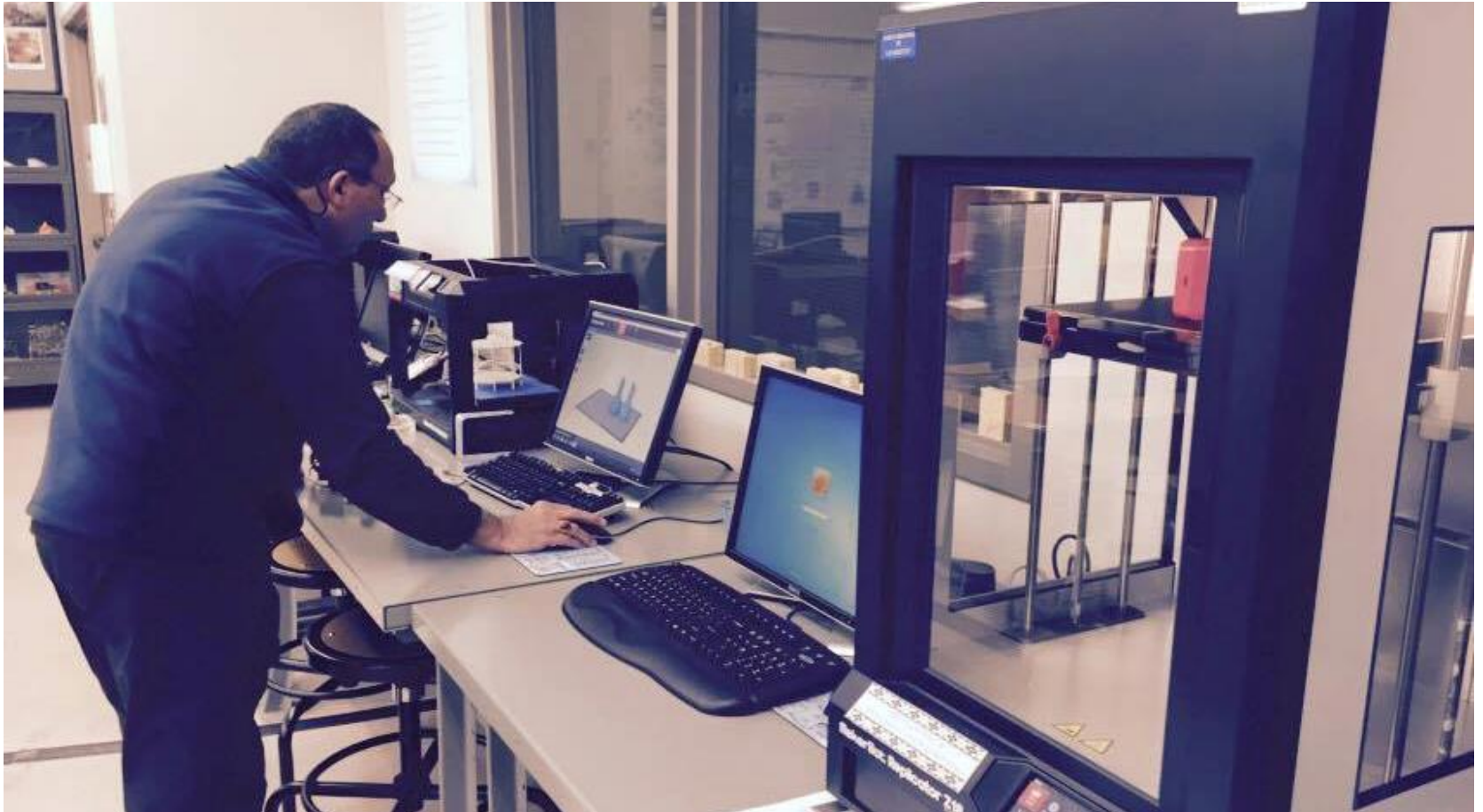
Introduction to Engineering and Design



Instructor: Dr. Nader Vadiee

**Pre-requisite: Your interest in
Engineering or Robotics !**

Building Capacity



Partnerships: DoD, DoE, NASA, NSF



DoD Center of Excellence Partnership



TCU and Sharing Resources



Closing the Circle!



Seven Generations!



Community Support



All the Way to the Finish Line!



Awards and Recognitions

- 2009 Carnegie Foundation- NM Professor of The Year
- 2009 Indian Energy Program – National Championship
- 2010 Indian Energy Program – National Championship
- 2015 American Indian College Fund- Faculty Of The Year
- 2017 NASA SWARMATHON- Grand Prize
- 2017 WCET and GlobalMindED – Digital Inclusion Award
- 2017 AICF - TOYOTA – TCU STEM Award Grand Prize

Moderated conversation

Andriel Dees

- Director, Diversity and Inclusion,
- Capella University

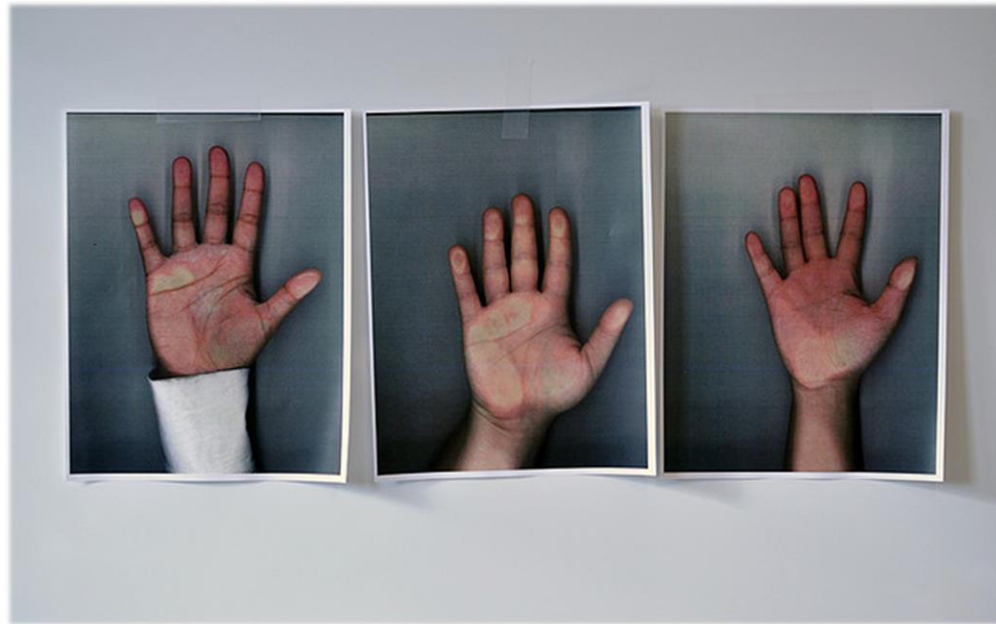


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Questions from the Audience



Contact Information

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Nader Vadiee: nader.vadiee@BIE.EDU

Digital Inclusion Award Criteria

- Principles of Digital Inclusion:
 - Digital Inclusion is about leveraging mindware, not hardware/software;
 - Digital Inclusion is one component of a larger communications ecosystem, not a standalone concept;
 - Digital Inclusion should be the overall goal of technological evolution.
- Submissions should...
 - Encourage collaborative use of digital resources in specific activities.
 - Empower participants to use digital resources as one component of a larger communications ecosystem, not a standalone concept.
 - Actively establish and sustain an expectation of digital inclusion in the candidate's operational environment.
 - Keep the Principles of Digital Inclusion in mind.
- Nomination Materials:
 - (2) verifiable examples of digital inclusion
 - Statement of Digital Inclusion philosophy



Learn More and Stay Connected

Focus Areas ▼

Initiatives ▼

Events ▼

Get Involved ▼

Visit WCET's Website to learn about our Focus Areas, Initiatives, Events, Membership and Sponsorship: <http://wcet.wiche.edu/>

Join WCET: learn more about the benefits of joining our community:
<http://wcet.wiche.edu/join-wcet>

Additional Information and Resources

Access to the resources discussed during this webcast, including the archive, will be available next week.

<http://wcet.wiche.edu/connect/webcasts>



Join us in Denver



Thank you Supporting Members for your commitment to WCET and eLearning

- *Colorado State University*
- *Cooley LLP*
- *Lone Star College System*
- *Michigan State University*
- *University of Missouri - Columbia/Mizzou Online*
- *University of North Texas*

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