



Enabling the Educational Ecosystem for AUN-TEPL's Success with MERLOT's Open Educational Services

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Director, CSULB Center for Usability in Design & Accessibility

California State University, Long Beach

SMU Learning Innovation Festival October 8, 2020

The Innovative Imperative: Responding to COVID Pandemic

- ▶ COVID pandemic has accelerated moving teaching and learning online.
- ▶ With billions of people affected by COVID, how do we scale strategies to enable so many to move education online?

- ▶ How do I change from hands-on to online content?
- ▶ How do I learn to teach online with technologies?
- ▶ How do I help my students learn online?

Only together we can cope with the overwhelming demand & delivery of online education.

HOW?

Sharing our digital resources freely with

- ▶ Open Educational Resources
- ▶ Open Educational Practices

With Reliable Internet Access

- ▶ Provide free & open access to teaching and learning materials– **OER: Open Educational Resources.**
 - ▶ etextbooks, tutorials, presentations, animations, simulations, workshops, and more
- ▶ Provide free & open access to effective practices to teach and learn (the “know-how”) – **OEP: Open Educational Practices.**
 - ▶ Descriptions & explanations of how you design, deliver, and assess education

“OPEN” DOORS TO NEW EDUCATIONAL CONTENT

- ▶ **Open Educational Resources (OER)**
- ▶ **OpenCourseWare (OCW)**
- ▶ **Open TextBooks**
- ▶ **Open Access Journals**

OPEN = Free of Cost

= Permissions to Use

**= Free to Choose How to
Use In Your Context**



Did Thermodynamic Equilibrium Excite Your Curiosity?

6



Thermodynamic Equilibrium Can Be Exciting

7



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V. Electromagnetism

VI. Circuits

VII. Optics

[Home](#) » [Thermodynamics](#) » [Kinetic Theory & Ideal Gas Law](#)

Chapter 20: Kinetic Theory & Ideal Gas Law

+ Illustrations

- Explorations

20.1: [Kinetic Theory, Microscopic and Macroscopic Connections](#)

20.2: [Partial Pressure of Gases](#)

20.3: [Ideal Gas Law](#)

20.4: [Equipartition Theorem](#)

20.5: [PV Diagrams and Work](#)

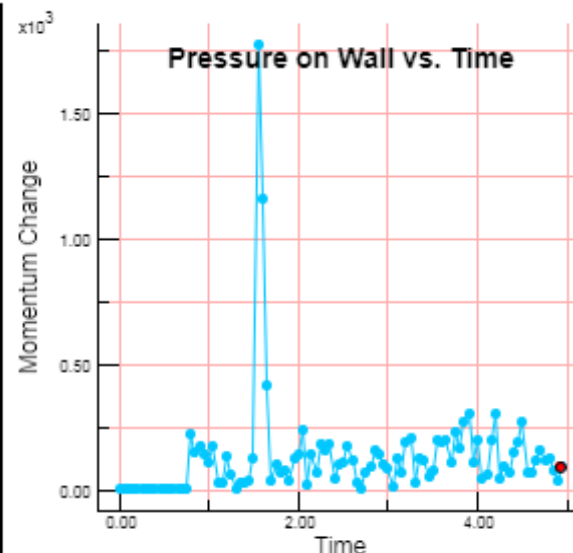
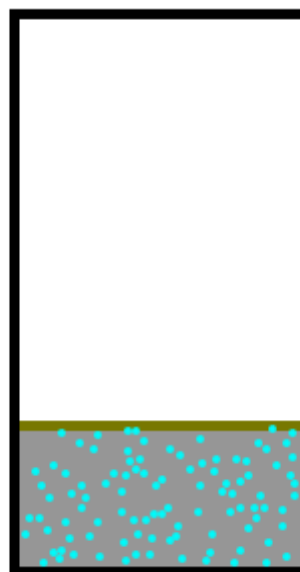
20.6: [Specific Heat at Constant Pressure and Constant Volume](#)

+ Problems

+ Supplements

Exploration 20.3: Ideal Gas Law

<< - >>



N	V	T	$N \cdot \langle \Delta p \rangle / \Delta t = \langle F \rangle$ for last 5 ti	$P = \langle F \rangle / A$
+100.00	+100.00	+100.00	+100.00	+121.52



N = 100

| T = 100

| V = 100

Set values

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DNA

Search

What is SmartSearch?

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AUN Thematic Network on Technology-enhanced Personalised Learning (AUN-TEPL)

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 [Members from my institution](#)

92,460

Learning Resources

175,842

Registered Members

4,352

Member Institutions

626

Recent Contributions

www.merlot.org

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1-24 of 726 results for "dna" 

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Social Sciences (30)

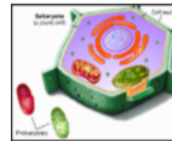
DNA from the Beginning



DNA from the Beginning is an animated tutorial on DNA, genes and heredity. The science behind each concept is explained... [see more](#)

Material Type: Simulation
Author: Cold Spring Harbor Laboratory
Date Created: April 11, 2000
Date Modified: August 16, 2018
Peer Review: ★★★★★

Biological animations and tutorials



Key biological concepts animated as narrated and stepped tutorials, along with quizzes.

Material Type: Animation
Author: Sumanas, Inc.
Date Created: June 23, 2005
Date Modified: August 8, 2018
Peer Review: ★★★★★
User Rating: ★★★★★

Genetic Science Learning Center



An educational site focused on modern human genetics analysis. Has both on-line activities and instructions for labs and... [see more](#)

Material Type: Reference Material
Author: Eccles Institute of Human Genetics, Utah Museum of Natural History
Date Created: April 18, 2000
Date Modified: August 16, 2018

The Virtual Transgenic Fly Lab



The lab will familiarize you with the science and techniques used to make transgenic flies. Transgenic organisms, which... [see more](#)

Material Type: Tutorial
Author: Donna Messersmith
Date Created: April 6, 2005
Date Modified: July 21, 2018
Peer Review: ★★★★★
User Rating: ★★★★★

Peer Reviewed, User Reviewed, Member Collections, Recommendations, and more

Overview of Material

Material Detail



DNA from the Beginning

DNA from the Beginning is an animated tutorial on DNA, genes and heredity. The science behind each concept is explained using animations related to DNA topics, an image gallery, video interviews, problems, biographies, and links related to DNA. There are three sections, Classical Genetics, Molecules of Genetics and Organization of Genetic Material. Key features are the clear explanations of classical experiments and the...



[Show More](#)

Keywords: genetics, genes, DNA, DNA models, History about DNA

Disciplines:

[Science and Technology](#) / [Agriculture and Environmental Sciences](#) / [Animal Sciences](#)

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Quality

Peer Review ★★★★★
 User Rating ★★★★★
 Comments (64)
 Learning Exercises (9)
 Bookmark Collections (492)
 Course ePortfolios (26)
[Accessibility Info](#)



Editors' Choice



MERLOT Classic

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DNA FROM THE BEGINNING

An animated primer of 75 experiments that made modern genetics.

CLASSICAL
GENETICS

MOLECULES
OF GENETICS

GENETIC
ORGANIZATION
AND CONTROL

DNA from the Beginning is organized around key concepts.

The science behind each concept is explained by:
animation, image gallery, video interviews, problem, biographies, and links.

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12



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ComPADRE
Community College Open Textbooks Collaborative
Cool4Ed
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Directory of Open Access Books
EdX
Edna Online
Encyclopedia of Life
European Association of Distance Teaching Universities EADTU
Flickr
Free Documentaries
Global Free Learning

1-10 of 100 results for "dna" (MERLOT will always display up to 100 results, regardless of filters)

Endometriosis is associated with...

Dan Gibson: How to build synthetic...

DNA | edX

Circulating, cell-free DNA as a...

TED

Biologist Dan Gibson edits and programs DNA, just like coders program a computer. But his "code" creates life, giving...

Bookmark

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edX

Free DNA courses online. Learn about genetics, DNA sequencing and more to start or advance your science career with free...

Bookmark

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PLOS

While cell-free DNA (cfDNA) has initially been shown to increase under acute and chronic pathological conditions like...

Bookmark

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New evidence that a large proportion

Clinical utility of circulating

Ancient DNA analysis of indigenous

Simultaneously searches over 75 other
OER and Free Collections

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Filter by

Discipline

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DNA Creative: Social Media Marketing...[dnacreative.tv](#)

The #1 Choice for Social Media Management & Marketing, Video Production, Graphic Design & Branding, Photography and...

 [Bookmark](#)[More info](#)[Go to material](#)**DNA Learning Center - Cold Spring...**[cshl.edu](#)


Thank you for your patience while we update our website to better serve you. Visit the DNA Learning Center website. The...

 [Bookmark](#)[More info](#)[Go to material](#)**BTS (방탄소년단) 'DNA' Official MV -...**[youtube.com](#)

BTS (방탄소년단) 'DNA' Official MV Credits: Director : YongSeok Choi (Lumpens) Assistant Director : Wonju Lee (Lumpens)...

 [Bookmark](#)[More info](#)[Go to material](#)**Sequencing of Circulating Cell-free...**[nejm.org](#)

Twenty years ago, cfDNA was identified as a plasma analyte when Y chromosomal "fetal" DNA was extracted and amplified...

 [Bookmark](#)[More info](#)[Go to material](#)**PRS | Bill Track | The DNA Technology...**[prsindia.org](#)

The DNA Technology (Use and Application) Regulation Bill, 2018 was

DNA Resource Core - DF/HCC[harvard.edu](#)

The DF/HCC DNA Resource Core provides DF/HCC members, Harvard

DNA Learning Center // University of...[nd.edu](#)

Summer science camps. The Notre Dame DNA Learning Center is a

Your DNA is an open book — but can't...[sciencenewsforstudents.org](#)

There are many companies that offer to read your DNA. But be prepared:

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Searches the WWW with “education rubric”

Finding & Using OER

- ▶ **MERLOT provides you access to just about every free and open teaching resource available.**
 - ▶ 90,000 resources with high level of curation in MERLOT collection
 - ▶ Over 1 million resources in over 70 other open libraries
 - ▶ Millions of resources on the web via special Google app
- ▶ **MERLOT is open to the world community to share their materials to the library** – the world's public library catalog.
 - ▶ All academic disciplines to various degrees
 - ▶ Usable in over 70 languages with Google Translator

Find AUN-TEPL Resources & People

SmartSearch

Search the MERLOT Collection, Other Libraries, and the Web

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What is SmartSearch?

Advanced Search by: **ISBN** | **Materials** | **Members**



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AUN Thematic Network on Technology-enhanced Personalised Learning (AUN-TEPL)

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Over 340 AUN-TEPL Members

MERLOT Members


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Workforce Development (2)

Member Type

☐ Faculty (86)
☐ Staff (16)
☐ Student (29)
☐ Administrator (9)
☐ Librarian (6)
☐ Health Care Professional (4)
☐ Teacher (K-12) (8)
☐ Content Developer/Instructional Designer (5)
☐ Researcher (1)
☐ Other (4)

Affiliation Categories

☐ Non-Profit (1)
☐ Corporation (1)
☐ Education (168)
☐ Government (2)
☐ Other (4)

1-24 of 168 results for: partner "AUN Thematic Network on Technology-enhanced Personalised Learning (AUN-TEPL)"



Jewel Morano



Member Type: Student
Affiliation: University of the Philippines
Member Since: September 11, 2020

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Joanne Robert



Member Type: Content Developer/Instructional Designer
Affiliation: Universiti Malaya
Member Since: September 3, 2020
Last Logged In: September 3, 2020

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David Shaw



Member Type: Faculty
Affiliation: Chung-Ang University
Member Since: September 2, 2020

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Mar Cruz



Member Type: Faculty
Affiliation: University of the Philippines
Member Since: August 30, 2020

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Affiliation: University of the Philippines
Member Since: August 30, 2020
Last Logged In: September 20, 2020

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Member Type: Faculty
Affiliation: University of the Philippines

Ruel Nacario




Member Type: Faculty
Affiliation: University of the Philippines

Marie Joy Arguillas



Member Type: Faculty
Affiliation: University of the Philippines

Materials Authored or Submitted by AUN-TEPL members via AdvanceSearch



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[Humanities \(2\)](#)
[Mathematics and Statistics \(1\)](#)
[Social Sciences \(8\)](#)
Material Type
[Animation \(1\)](#)
[Assessment Tool \(1\)](#)
[Collection \(1\)](#)
[Online Course \(4\)](#)
[Online Course Module \(4\)](#)
[Presentation \(3\)](#)
[Simulation \(8\)](#)
Audience
[Grade School \(4\)](#)
[Middle School \(4\)](#)
[High School \(4\)](#)
[College General Ed \(15\)](#)

Management Accounting - Process...


This digital resource is used in the Management Accounting course offered by Singapore Management University. The course... see more

Material Type: Online Course Module
Author: Katherine Yuen; AUNTEPL
Date Created: October 6, 2019
Date Modified: December 3, 2019
 User Rating: ★★★★★


[Bookmark](#) [More info](#) [Go to material](#)

Listening and Speaking for...


This course is provided for anybody who wants to learn English as in the second language. Listening and Speaking for... see more

Material Type: Online Course
Author: Assoc. Prof. Dr. Songsri Soranasataporn
Date Created: December 2, 2019
Date Modified: August 27, 2020
 User Rating: ★★★★★


[Bookmark](#) [More info](#) [Go to material](#)

Tourism and Hospitality Management...


-Enrollment is closed for now- Tourism and Hospitality Management 4.0 - Thai MOOC Tourism and Hospitality Management 4.0... see more

Material Type: Online Course
Author: Dr.Kaewta Muangasame
Date Created: December 4, 2019
Date Modified: August 27, 2020
 User Rating: ★★★★★


[Bookmark](#) [More info](#) [Go to material](#)

Accounting Challenge - ACE


The Accounting Challenge (ACE) is a single-player mobile learning app developed for the School of Accountancy in March... see more

Material Type: Assessment Tool
Author: Seow Poh Sun; Wong Suay Peng
Date Created: February 23, 2020
Date Modified: March 2, 2020
 Editor Review: ★★★★★


[Bookmark](#) [More info](#) [Go to material](#)


Learning Analytics for Enhancing...



Learning Analytics refers to the use of analytics and data mining techniques on educational data sets to gain insights... see more


Material Type: Presentation
Author: Professor Venky Shankaraman
Date Created: April 10, 2020
Date Modified: April 10, 2020


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Financial Accounting


Enhancing Learning through a Mobile...


Professor Tan Kar Way: Do My Students...


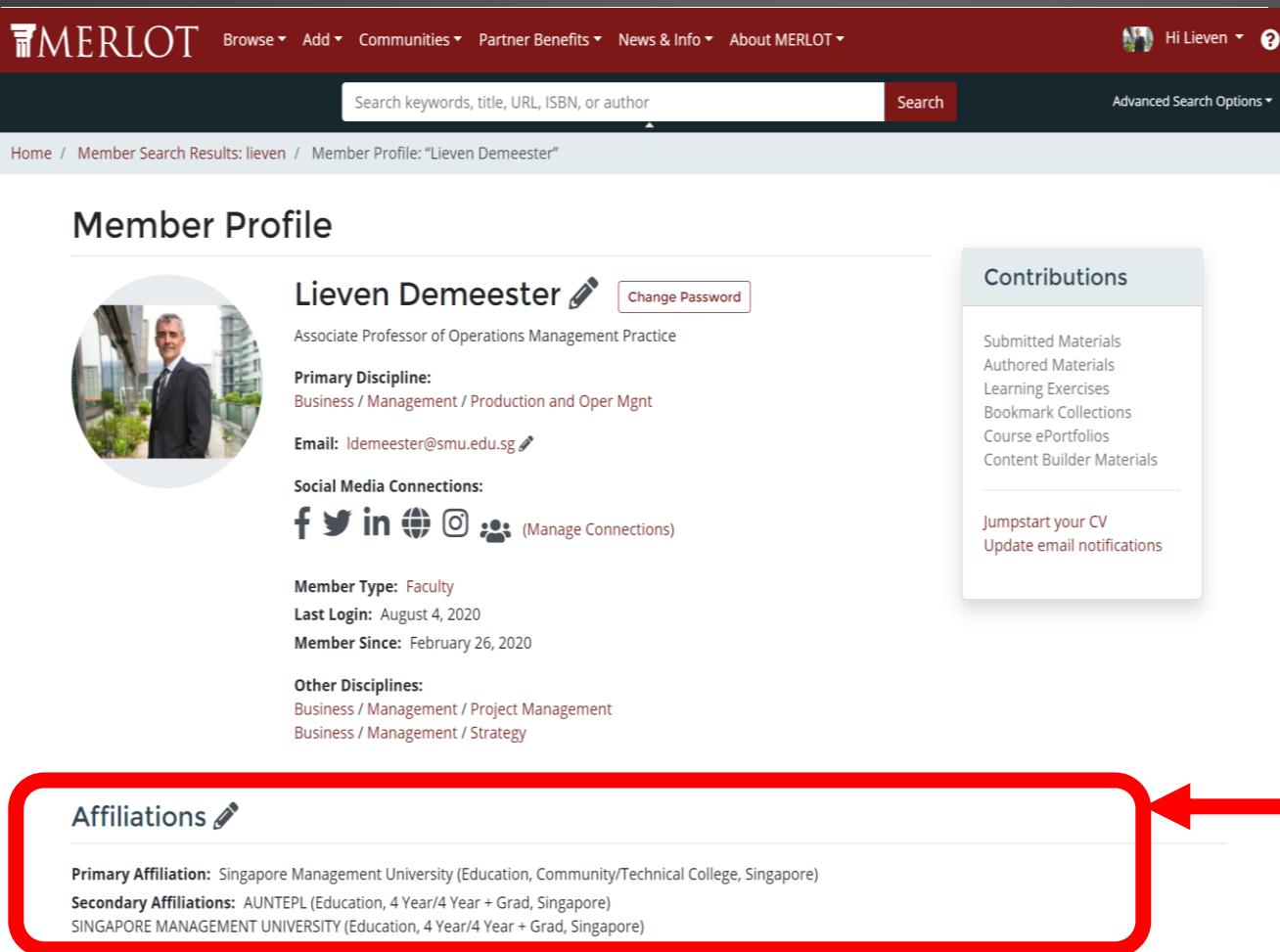
Mahidol University Extension - ...


Mind the Drone


AUN-TEPL Creating A Curated Shared Collection


- ▶ AUN-TEPL partner institutions support their faculty and staff **contributing free online teaching and learning resources in MERLOT**
- ▶ AUN-TEPL faculty and staff become MERLOT members for FREE and can create and share their **own personal curated collection** of materials using **MERLOT's Bookmark Collection** tools.

Become a MERLOT member – It's FREE




The screenshot shows the MERLOT website interface. At the top is a dark red navigation bar with the MERLOT logo and links: Browse, Add, Communities, Partner Benefits, News & Info, and About MERLOT. A search bar is located below the navigation bar. The main content area displays the member profile for Lieven Demeester. The profile includes a circular profile picture, a 'Change Password' button, and various details about the member's background and contributions. A red box highlights the 'Affiliations' section, which lists the member's primary and secondary affiliations. A red arrow points from the text 'Add AUNTEPL as your secondary affiliation' to the 'Secondary Affiliations' entry in the red box.







Member Profile

Lieven Demeester  [Change Password](#)

Associate Professor of Operations Management Practice

Primary Discipline:
Business / Management / Production and Oper Mgmt

Email: ldemeester@smu.edu.sg 

Social Media Connections:
      (Manage Connections)


Member Type: Faculty
Last Login: August 4, 2020
Member Since: February 26, 2020

Other Disciplines:
Business / Management / Project Management
Business / Management / Strategy

Contributions

- Submitted Materials
- Authored Materials
- Learning Exercises
- Bookmark Collections
- Course ePortfolios
- Content Builder Materials

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Affiliations 


Primary Affiliation: Singapore Management University (Education, Community/Technical College, Singapore)

Secondary Affiliations: AUNTEPL (Education, 4 Year/4 Year + Grad, Singapore)
SINGAPORE MANAGEMENT UNIVERSITY (Education, 4 Year/4 Year + Grad, Singapore)

MERLOT's Open Educational Services to open to you!

Add AUNTEPL as your secondary affiliation

Contribute to the AUN-TEPL Collection

MERLOT [Browse](#) [Add](#) [Communities](#) [Partner Benefits](#) [News & Info](#) [About MERLOT](#)  Hi Gerry

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Add a Material

Submitting a material to MERLOT is easy! Simply enter as many details about the material as you can. The more information you enter, the easier it will be for others to find the material in MERLOT. Keep in mind that MERLOT only stores the metadata for the material and links out to it with the URL you provide.


URL *

Or [Upload a File](#)

Title *

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Disciplines * Use selector below to choose a discipline.

Select a discipline... 

Description * 

Keywords

Enter multiple keywords, separating them with a comma or semicolon. Click Add when all words are entered. (200 character limit per keyword)

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ADD materials to MERLOT

Catalog the materials by filling out the form

Add AUNTEPL as a keyword

Creating & Sharing Your MERLOT Bookmark Collection

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Material Detail

DNA from the Beginning




DNA from the Beginning is an animated tutorial on DNA, genes and herec behind each concept is explained using animations related to DNA topics, a video interviews, problems, biographies, and links related to DNA. There ar Classical Genetics, Molecules of Genetics and Organization of Genetic Mate are the clear explanations of classical experiments and the...

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Keywords: genetics, genes, DNA, DNA models, History about DNA

Disciplines:

Science and Technology / Agriculture and Environmental Sciences / Anima
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Create a new Bookmark Collection and add this material.

Title *

Description *

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Bookmark Collection

Linguistics

Material I want to look at in my free time

Date Added to MERLOT: June 24, 2020

Created by: Gerry Hanley

License:   Derived from

Share



▼ Collection Content



Linguistics (Open (Access) Textbook)
kfa;lkdfja;lkdfj



The Linguistics Virtual Campus (VLC) (Collection)



Glossa: A Journal of General Linguistics (Collection)




24.942 Grammar of a Less Familiar Language | Linguistics and Philosophy (Online Course)



24.900 Introduction to Linguistics (MIT) (Online Course)



MERLOT has Editorial Boards for Academic Disciplines: YOU CAN JOIN!

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Member Type *

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☐ Do you want to be involved as a reviewer of materials in your discipline? ?

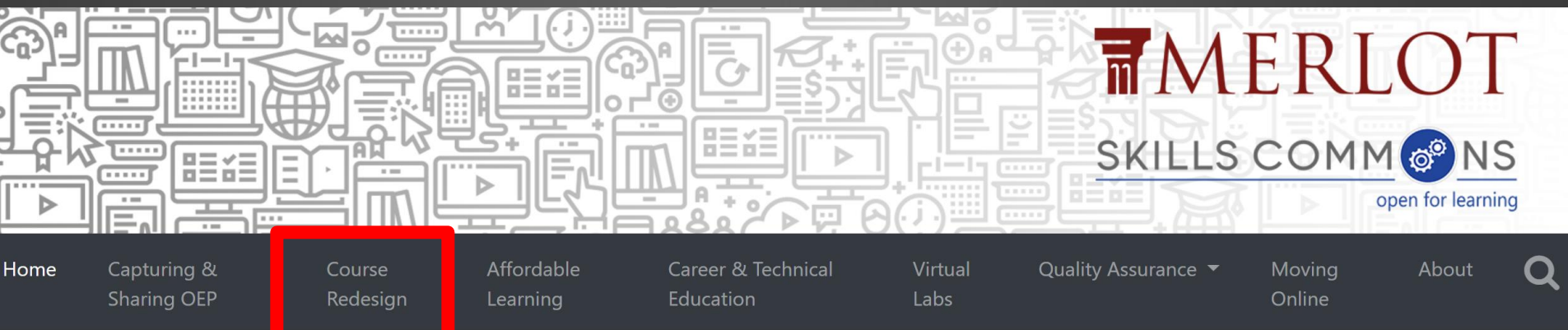
Content without Practices Goes Nowhere

- ▶ How do I move my teaching online?
- ▶ How do I redesign my teaching & curriculum so more students succeed?

Explore our new free and open portal
for **Open Educational Practices**

Openly Sharing Educational Innovations

25



Open Education Practices: Sharing Through ePortfolios

To advance [open educational practices \(OEP\)](#), [MERLOT](#) and [SkillsCommons](#) have designed this OEP portal to enable easy discovery and sharing of free, open, and exemplary collections of ePortfolios along with tools, templates, and guidelines that showcase open practices in higher education.



Moving Online

The COVID-19 pandemic required higher education to quickly transform their instruction to online modalities. MERLOT



Course Redesign with Technology

Over 700 faculty have authored open teaching ePortfolios on how they redesigned their courses with technology



Affordable Learning

Over 100 faculty have authored open ePortfolios about how and why they've adopted and taught with free and open

Course Redesign ePortfolio Showcase

Kinesiology

Explore the open teaching ePortfolios that capture faculty's course redesign experiences and accomplishments. Each ePortfolio opens the faculty's and institution's practices for others to learn, adopt, and adapt for their own instructional needs.

Show entries

Search:

e-Portfolio Title ↑↓	Author ↑↓	Campus ↑↓
Exercise Physiology and Laboratory Redesign The relationship between metabolism and physical activity is difficult for many Exercise Physiology students to grasp. This is especially true when students are expected to apply basic scientific concepts to the body in motion. Therefore, the purpose of this course redesign is to provide the technology needed for students to measure physiological variables during exercise and how this information can be applied to understanding the relationship between metabolism and physical activity.	Bernard, Jeffrey	CSU Stanislaus
Flipping, Mastery and Data Based Decision Making The course will be redesigned to use I) a flipped format, II) a mastery learning progression approach and III) data based decision making to target instruction. Technologies used to facilitate these changes are I) lecture capture technology; II) computer based testing using data gathering and lock down browser technology, and III) learning analytics software, wireless classroom response systems (i.e. "clickers"), and video messaging.	Kressler, Jochen	San Diego State
Strength and Conditioning Flipped and Blended/Hybrid Class This proposal is centered on student success, accessibility, and job-readiness. It also functions as a "proof of concept" for	Galpin, Andrew	CSU Fullerton

Explore over 700 open educational practices in ePortfolios

CSU The California State University

Course Redesign with Technology

Strategies for Student and Faculty Success



Coherent Statistics with Flipped Instruction

Ji Son, Assistant Professor, Psychology Department

CSU Los Angeles



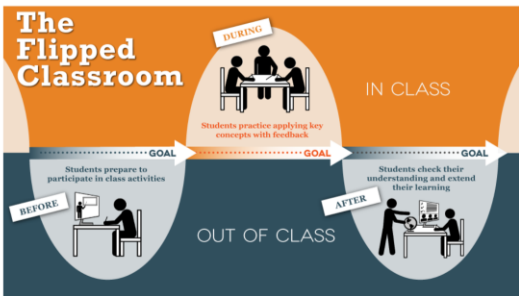
About Me

- I am a recently tenured professor at CSULA and enjoy teaching statistics and cognitive science. I am interested in helping students gain skills and perspectives that will continue on with their education. I received my PhD in Cognitive Science and Psychology at Indiana University.

About the Course and the Students

Stage 1

The Flipped Classroom



From the Center for Teaching and Learning at UT Austin

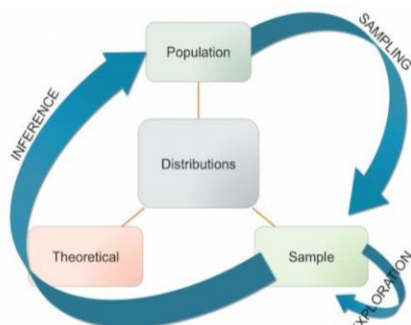
Background on the Redesign

Why Redesign Your Course?

- Students come into this statistics course with little experience in quantitative reasoning about data. Also, they come in with much emotional baggage regarding their past experiences with mathematics. Thus, with much trepidation and

Diversity

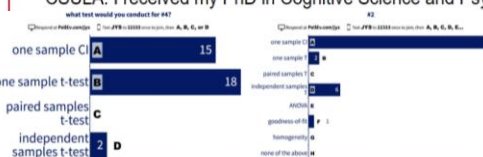
- Because of the flipped classroom, more face-to-face time can be devoted to activities that require ubiquitous computers that have the requisite software (e.g., SPSS).
- The pedagogical strategies employed here promote students working together as a diverse community of scholars. Students are encouraged to use multiple representations (e.g., diagrams, gestures, words, equations) and multiple ways of explaining in order to communicate these abstract ideas about statistics.
- The class is designed for students with a wide range of algebra skills.



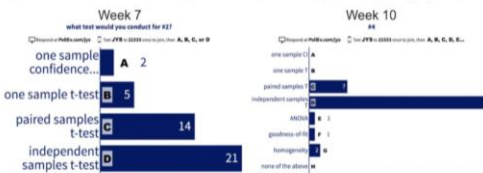
Teaching and Learning Resources

The above graphic is the "distribution triad" used to create coherence across the many topics covered in an inferential statistics course.

Check out our freely available materials (in a format importable into campus LMS where questions are embedded into LMS: <http://coursecraft.org>; word doc format for students to fill out with pencil-and-paper: <https://sites.google.com/view/statteach>). Dr. Son also has done research and professional development for

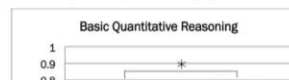


The next two graphs below illustrate students' responses to situations where the most apt statistical analysis was independent samples t-test. Even though they have covered many more statistical tests by Week 10 and thus have many more possible choices, students have improved in being able to apply this analysis appropriately.



Basic Quantitative Reasoning

Even though this quantitative reasoning test had no statistics content, nor did the course cover these topics explicitly, students improved on average about 7% ($SD = 13\%$), a statistically significant increase, $t(47) = 3.57, p = .001$.



Teaching ePortfolios on Adopting OER

28



Business



Abbas P. Grammy, Ph.D. from California State University, Bakersfield
eTextbook: Principles of Economics from OpenStax College



Course Description:

Introduction to economic analysis. Topics covered include microeconomic theory and application and macroeconomic theory and policy. Also, an in-depth study of into selected topics and current events.

Quote

"Because most of my students come from low-income families, I wanted to help save them money on the textbook. My department chair recommended the textbook to me. The faculty at my institution are adopting a policy of using e-textbooks in introductory and principles of economics courses."

[Learn How I Use This Open Textbook in My Course](#)



Daniel MacDonald, Ph.D. from California State University, San Bernardino
eTextbook: Principles of Microeconomics by OpenStax College

Teaching ePortfolios on Adopting OER



Principles of Economics

CSU Instructor Open Textbook Adoption Portrait

Abstract: This open textbook is being utilized in an economics course for high school students who seek college credit by Abbas P. Grammy, Ph.D. at California State University Bakersfield. The open textbook provides a large number of brief chapters covering both economic theory and applications. The application section covers many social issues such as poverty, inequality, discrimination, immigration, globalization, unemployment, and inflation. The main motivation to adopt an open textbook was to save money for students. Most students access the open textbook online.

COOLforED is a service of the California State University-MERLOT program.
Partial funding provided by the State of California, the William and Flora Hewlett Foundation,
and the Bill and Melinda Gates Foundation.
Questions? Email cool4ed@cdl.edu

About the Textbook

About the Course

Textbook Adoption

Principles of Economics

Description:

Principles of Economics covers the scope and sequence for a two-semester principles of economics course. The text also includes many current examples, including; discussions on the great recession, the controversy among economists over the Affordable Care Act



ECON 100: The Economic Way of Thinking

Description:

Introduction to economic analysis. Topics covered include microeconomic theory and application and macroeconomic theory and policy. Also, an in-depth study of into selected topics and current events.



OER Adoption Process

Because most of my students come from low-income families, I wanted to help save them money on the textbook. My department chair recommended the textbook to me. The faculty at my institution are adopting a policy of using e-textbooks in introductory and principles of economics courses.

The textbook comes with an excellent test bank. I brought a selection of chapter questions to the class to have students practice and learn what to expect in

MERLOT Content Builder has TEMPLATES to AUTHOR YOUR OWN Teaching ePortfolio

30



[Textbook Name]

Common Course ID: [Course name/number linked to descriptor]

[UC/CSU/CC] Instructor Open Textbook Adoption Portrait

Abstract: This open textbook is being utilized in a [discipline] course for undergraduate [description if any] students by [Instructor's name] at [Educational Institution name]. The open textbook provides [brief description of highlights and any instructor supplements]. The main motivation to adopt an open textbook was [supply reason]. Most student access the open textbook in [format and/or access method].

Reviews: The book has been reviewed by faculty [\[link to COERC reviews\]](#) from within the three segments (CCC, CSU, and UC) of the California higher education systems.

COOLforED is a service of the California State University-MERLOT program.
Partial funding provided by the State of California, the [William and Flora Hewlett Foundation](#),
and the [Bill and Melinda Gates Foundation](#).
Questions? Email cool4ed@cdl.edu

About the Textbook

About the Course

Textbook Adoption

Textbook Title: [\[linked to table of contents or website\]](#)

Description: Provide a brief description of the textbook including concepts, pedagogical approach,

Upload
Textbook
Image
(200 w by 260 h)

**Course Number:
Name**

Institutional Logo
(200 w)

Description: Give description of course utilizing the course catalog at the educational institution if available.

Prerequisites: [courses, test scores]

OER Adoption Process

Describe the main motivation for adopting the open textbook e.g. saving students money, better control over instructional materials, ability to customize for students needs, etc.

Explain any external materials that you used to supplement the textbook

Welcome to MERLOT

Science faculty take advantage of
passive observation and
viable part of the

- Biology
- Chemistry
- Physics
- Earth/Environmental Science
- Engineering
- Math
- Health Sciences

Virtual Labs by Commons, and Partners!

Virtual labs to engage students in learning through active participation rather than
with bandwidth maturity and mobile access make virtual labs an increasingly

We invite you through this site to learn about current and innovative virtual labs technologies, lab experiments, and simulations used in teaching the science, technology, engineering, and math disciplines in higher education.

OLC Ideate Labs for Online STEM: Innovating STEM Education



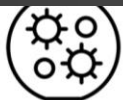
The Online Learning Consortium and MERLOT would like to invite you to our **OLC Ideate Labs for Online STEM: Innovating STEM Education 2020 on August 19-21, 2020**. This **free** virtual expo will showcase a wide range of virtual and distance labs designed to support online STEM education, offered by both commercial and open educational resource (OER) providers. This event brings educators and providers together, not only offering expert guidance on how best to deploy the

Online Activity Labs:

Explore molecule shapes by building molecules in 3D! How does molecule shape change with different numbers of bonds and electron pairs? Find out by adding single, double or triple

Open ePortfolios on Virtual Labs

33

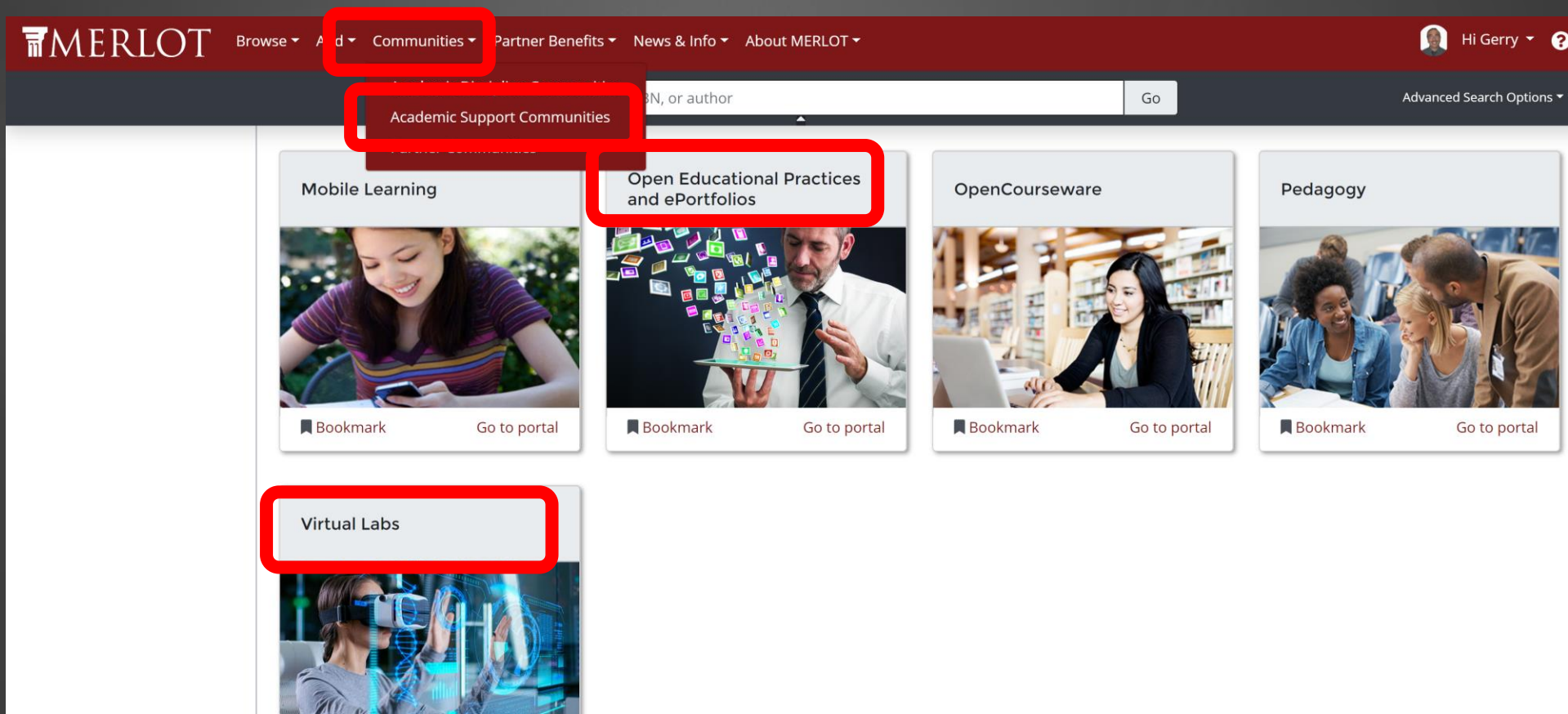


CHEMISTRY

Link to ePortfolio and Description	Author	Author's Narrative	Subject	Campus
Embedding Virtual Content into Physical Chemistry Chemistry 160: Physical Chemistry; P-Chem covers fundamental topics in Thermodynamics, Kinetics, Quantum Mechanics and Spectroscopy: Redesigning of Physical Chemistry at San Jose State University with virtual and augmented reality is needed to decrease DFW rates and increase learner outcomes.	Wolcott, Abraham	Video	Chemistry	San Jose State
Developing Novel Hardware Controllers for Hands-on Virtual and Augmented Reality Science Labs CHEM 105/105L (General, Organic, and Biochemistry) and CHEM 341 (General Biochemistry): The present project seeks to provide students with realistic tactile feedback in virtual, mixed, or augmented reality lab experiments. We are designing and testing a series of prototype hardware tools which augment the functionality of standard laboratory equipment and allow them to pass into the virtual environment while still allowing students to manipulate and sense them as they would in a traditional hands-on lab.	Hamadani, Kambiz M.	Video	Chemistry	CSU San Marcos
General Biochemistry with Labster Virtual Lab Modules We will use virtual labs created by Labster Inc to provide students with virtual exposure to key concepts in biochemistry including enzyme kinetics, metabolism, bioenergetics, regulation, and protein/nucleic acid structure-function.	Kambiz, Hamadani	-	Biochemistry	CSU San Marcos

Where do you find OER & OEP?

<http://oep.merlot.org>



The screenshot shows the MERLOT website homepage. The navigation bar at the top includes the MERLOT logo, a search bar, and several menu items: Browse, Add, Communities (highlighted with a red box), Partner Benefits, News & Info, and About MERLOT. A user profile for 'Hi Gerry' is visible on the right. Below the navigation bar, there is a search bar with the placeholder text 'Search by title, keyword, or author' and a 'Go' button. A dropdown menu for 'Academic Support Communities' is also visible, with 'Open Educational Practices and ePortfolios' highlighted by a red box. The main content area features several tiles, each with a title, an image, and two buttons: 'Bookmark' and 'Go to portal'. The tiles are: 'Mobile Learning' (image of a woman using a smartphone), 'Open Educational Practices and ePortfolios' (image of a man holding a tablet with floating icons, highlighted with a red box), 'OpenCourseware' (image of a woman using a laptop), 'Pedagogy' (image of a group of people in a classroom), and 'Virtual Labs' (image of a person using a VR headset, highlighted with a red box).

MERLOT

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Hi Gerry ▾ ?

Search by title, keyword, or author

Go

Advanced Search Options ▾

Academic Support Communities

Open Educational Practices and ePortfolios

Mobile Learning

OpenCourseware

Pedagogy

Virtual Labs

Bookmark Go to portal

Bookmark Go to portal

Bookmark Go to portal

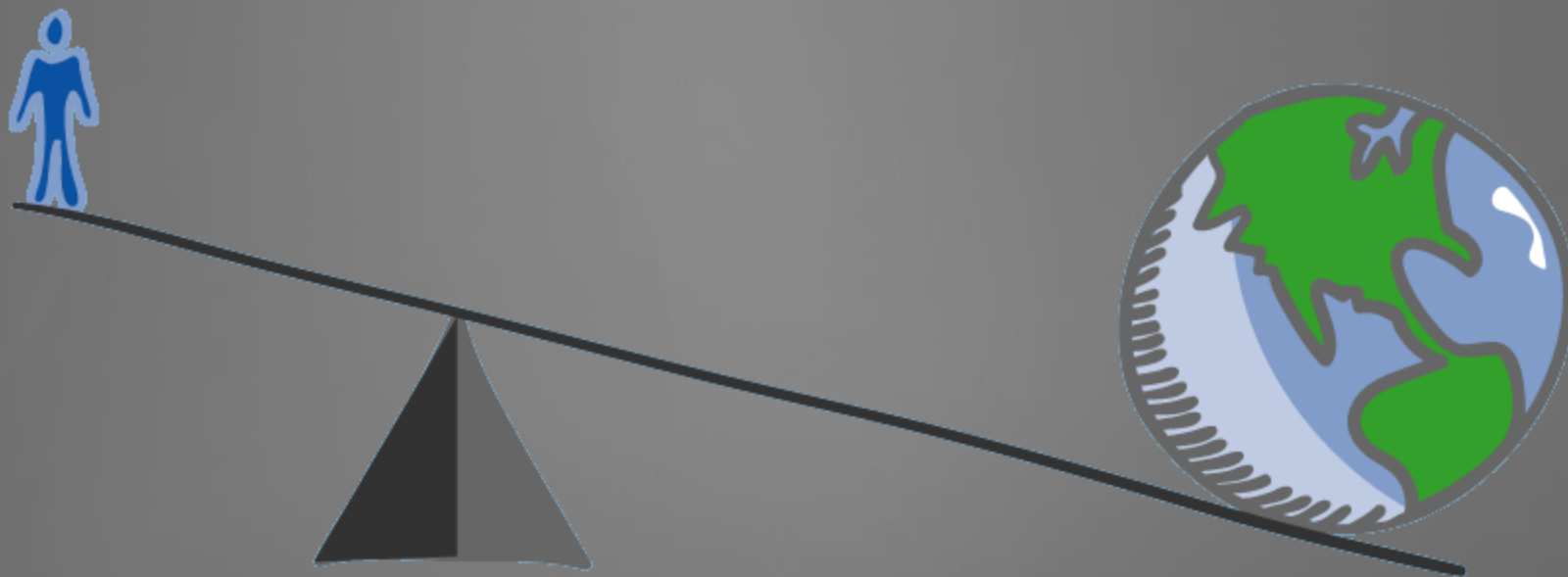
Bookmark Go to portal

Bookmark Go to portal

Invitation to Action!

- ▶ **Use OER and OEP** to empower people to become better educators and educated!
- ▶ **We can do better by growing the collections of OER and OEP** so all have greater access to humanity's knowledge and skills.
- ▶ **Invite people to share their knowledge, skills, and wisdom for the betterment of humanity.**
 - ▶ Use MERLOT and SkillsCommons to share your teaching resources and know-how.

Shall We Change the World as It Changes Us?



By Being Better Together!

Mass = Educational Innovations

Mass = MERLOT & AUN-TEPL Community



THANK YOU

GERRY.HANLEY@CSULB.EDU

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