



(Source: <https://scholarsteamk12plus.weebly.com/>)

ADVANCE AMERICA! LONG LIVE THE CAUSE OF INNOVATION!

¡AVANCE AMÉRICA! ¡QUE VIVA LA CAUSA DE INOVACIÓN!

前进吧，亚美利加！创新的事业万岁！



THANKSGIVING DEDICATION BY EDWARD LOCKE THE WEBMASTER

(网站站长骆南植感恩节献词)

On the occasion of the Thanksgiving Day (Thursday, November 27), 2014, I hereby have dedicated this SCHOLAR STEAM K12 Plus Website to the World-Wide Manchu Nation, in sincere gratitude and deep appreciation for the outstanding contributions the Manchu Nation has made to the successful integration of over 50 different ethnic peoples in China into a multi-cultural, multi-racial, and unified nation-state since the ancient times, to the defense of peace and stability in Asia, and to the promotion of mutual understanding and harmonious co-existence among the Nations in the modern world.

值此 2014 年美国感恩节 (11 月 27 日, 星期四), 本人谨将本《中小学至终生创新型学者》(SCHOLAR STEAM K12 Plus) 网站敬献给遍布全世界的满洲民族, 以表达对于满洲民族自古以来为把中华 50 多个不同族群成功地融合为一个多元文化的、多种族、大一统的民族国家, 维护亚洲的和平与稳定所立下的丰功伟绩, 和近代历史上为促进各国人民之间的互相理解与和谐共处所做出的巨大贡献的诚挚感恩与高度赞赏。

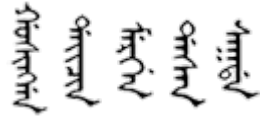


Promoting a **Streamlined, Cohesive, Holistic, Optimized, Life-long, Adaptive and Re-adjustable (SCHOLAR) Model** for Engineering and Technology Education from K-12 through Community Colleges to Graduate Schools or Corporate World and Beyond

为工程与技术教育推动一个**流线型的、紧密衔接的、功能齐全的、最优化的、终生的、适应性强的、可调整的 (SCHOLAR STEAM K12 Plus) 模式**，贯穿从幼儿园通过社区学院到研究生院或公司世界的整个生涯

MESSAGE FROM THE WEBMASTER

by Edward Locke
(Gosingga-Daicin
Mergen-Dasan
Sakda)



骆南植

(果新嘉岱清·默耕鞑山·萨克达)

First Draft: May 15, 2014
Final Revision: October 19, 2014

In the recent decades, K-12 engineering and technology curriculum developers have pioneered the introduction of engineering topics into K-12, notably high school or Grades 9-12 classrooms in the United States, with various degree of success in terms of getting high school graduates interested in pursuing college level engineering and technology majors. These pioneering efforts should be given appropriate credits and continued. However, generally speaking, some of the major shortcomings of the current practice of K-12 engineering education in the United States include the lack of cohesiveness in the coverage of knowledge content, the connection of such practice with the established practice in college level engineering education. These problems have been addressed by the authoritative report issued on September 8, 2009, by the Committee on K-12 Engineering Education established by the [National Academy of Engineering](#) and the [National Research Council](#), titled *Engineering in K-12 Education: Understanding the Status and Improving the Prospects*, which included the absence of cohesive K-12 engineering curriculum and the lack of well-developed standards.

Several months before the publication of the [Committee on K-12 Engineering Education report](#), I have, through graduate research at the University of Georgia, completed a research project on K-12 STEM education with a focus on engineering, advocating a proposed model for a clear description of K-12 age-possible engineering knowledge content, in terms of the selection of analytic principles and predictive skills for various grades, based on the mastery of mathematics and science pre-requisites, as mandated by national or state performance standards; and a streamlined, cohesive, and optimized K-12 engineering curriculum, in terms of a continuous educational process that starts at kindergarten and/or elementary schools, intensifies at middle schools, differentiates at high schools and streamlines into four-year

universities through two-year community colleges, integrating solid mastery of particular analytic skills and generic engineering design processes. This article is based upon a “Vision Paper” that was presented at the International Technology Education Association’s 71st Annual Conference held in Louisville, Kentucky under the sponsorship of Dr. John Mativo, from the University of Georgia. It is hoped that many ideas explored in this article could provide answers to the problems in the current practice of K-12 engineering education, as discussed in several months later, by the Committee on K-12 Engineering Education.

After my graduation from the University of Georgia with an Education Specialist degree, I returned to Los Angeles Area. With encouragement from several engineering and technology professors across the United States, and especially with generous support from engineering faculty and administrators from East Los Angeles College, I continue to promote the cause and have gained support from people at grass-root level.

I developed this website to promote the SCHOLAR STEAM K-12 Plus – Innovation Deal USA 21st Century Project, as a collective endeavors of supporters for a new model of K-12 engineering and technology education, aiming at the training of new generations of American STEAM talents, educated from K-12 up, in the spirit of social and ethical responsibilities, ecological awareness, free enterprise and social enterprise, innovation, and appropriate application of appropriate technologies.

The structure of this website is explained as follows:

The **HOME** tab leads to the Home page of this website, i.e., this page, which explain the purpose of creating this website and how to use it.

The **A NEW VISION** tab leads to the hosting page that links to the documents that describe the SCHOLAR STEAM K12 Plus - Innovation Deal USA 21st Century Project, which are covered in the following web pages: (1) [Statement of Philosophy](#), (2) [The Vision Paper](#), (3) [History of the Vision](#), (4) [Research Project for the Vision Paper](#), (5) [Planning& Progress Report](#), and (6) [Guidelines for Pedagogic Experiments](#).

The **RESEARCH OUTCOMES** tab leads to the documents that summarize the outcomes of the research aimed at the initial determination of K-12 age-possible topics of engineering, with lists of topics as well as their associated formulas and mathematics and science (i.e., physics and chemistry) pre-

requisites, and the recommendation for the grade levels they can be tried in actual K-12 classroom settings through pedagogic experiments. These topics are organized into several categories corresponding to current college-level engineering majors and courses. They include five major categories, each with several courses or subjects: (1) **Engineering Foundation** (Introduction to STEAM for K12, Statics for K12, Dynamics for K12, Strength of Materials for K12, Engineering Materials for K12, Statistics & Probabilities for K12, and Engineering Economics for K12); (2) **Mechanical Engineering** (Mechanical Design for K12, Fluid Mechanics for K12, Aerodynamics for K12, Heat Transfer for K12, Thermodynamics for K12); (3) **Engineering Technology** (CADD & Product Design for K12, Manufacturing Processes for K12, Engineering Programming for K12); (4) **Civil Engineering** (Introduction to Computerized Civil Engineering Design for K12, Introduction to Global Positioning System & Land Surveying for K12, Introduction to Structural Design for K12); (5) **Electrical Engineering** (Introduction to Electrical & Electronics Devices for K12, Introduction to Circuit Analysis & Simulation for K12, Introduction to Robotics & Programming for K12); (6) **Capstone Engineering Design and Research**; (7) **Available K12 STEAM Learning Resources**; (8) **Mathematics Pre-requisites for Undergraduate Engineering Programs**; (9) **Recommended Artistic Skills for STEM Professionals**.

The **VISION TEAM** tab leads to the hosting page which describes the roles and responsibilities of the participants of the SCHOLAR STEAM K12 Plus Project, including leaders (mostly college faculty and administrators) who actually work on the project, outside friends and supporters who provides advice and feedbacks, and student volunteer participants who work as assistants in exchange for free lessons on career skills and credits. The hosted web pages include the following: (1) **Academic Leadership** (In alphabetical order by the first name: [Artin Davidian](#), [Brian Vasquez](#), [Edward Locke](#), [Hrair P. Shekerjian](#), [Humberto Gallegos](#), [Jose Ramirez](#), [Kamyar Khashayar](#)); (2) **Friends & Supporters**; (3) **Volunteers**.

The **FEEDBACK** tab leads to the following pages: (1) [Statement of Support](#), and (2) [Constructive Criticism & Advice](#).

The **ACKNOWLEDGEMENT** tab lead to the page that expresses gratitude to those who have supported my endeavors for improving K-12 STEAM education in the United States before the start of this project, and to those who support the SCHOLAR STEAM K-12 Plus - Innovation Deal USA 21st Century Project as a collective teamwork.

The **AD** tab leads to the hosting page for placing ads (for the potential financial supporters of this project ONLY). The initial part of the research for the SCHOLAR STEAM K-12 Plus - Innovation Deal USA 21st Century Project is intended to be completed using the Linux model, the Servant Leadership model and the Social Enterprise model, without funding from the United States Government. After the completion of the initial part of the research, i.e., the initial determination of the K-12 age-possible engineering topics, a non-profit organization will be established, and grants from both public and private sources will be applied for to support the implementation of the project. Alternatively, advertisement by businesses could generate funds to support the research and pedagogic experiments of the project. The advertisements are classified into the following categories: Clothing, Food, Real Estates, Transportation, Supermarkets, Professional Services, Research Institutions, Manufacturers, Medical Care, Culture & Arts, Sales & Trading, Education & Training, Hiring, Professional Employment, Friend-making, Civic Groups, Match-making, Enterprise Building. Incomes and expenditures will be published for public review.

The **Contact** tab leads to the contact information for the project team members.

POTENTIAL VISITORS TO THIS WEBSITE

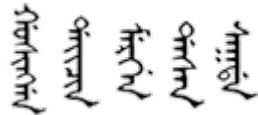
This website has been developed for (1) political leaders at Federal, State and Municipal levels, especially those involved in K12 education reform; (2) college and high school administrators, professors/instructor and researchers in STEAM fields; (3) corporate management interested in the improvement of STEAM education; (4) any citizen of good intentions interested in the training of the next generations of socially responsible, ecologically conscious, and highly innovative American STEAM leaders and professionals; and (5) any charitable, social service, labor, business, civil rights, and other groups and institutions interested in making the United States a better and stronger nation through active promotion of social justice and sustainable economic growth.

A NEW AMERICAN PATRIOTIC SONG

LEAD AMERICA! AMERICA LEAD IN STEAM! WE YANKEES NEVER, NEVER SHALL BE LEFT BEHIND!

The Official Hymn of the SCHOLAR STEAM K12 Plus Website

by Edward Locke
(Gosingga-Daicin
Mergen-Dasan
Sakda)



骆南植

(果新嘉岱清·默耕鞞山·萨克达)

First Draft: August 1, 2009, Athens Georgia, USA

Final Revision: November 25, 2014, Monterey Park, California, USA

On August 1, 2009, while emailing my *Vision Paper* to friends in Georgia, I composed the first part of the following American patriotic song, based on some ideas that came to my mind on the airplane that brought me to Logan to attend the first meeting of the National Center for Engineering and Technology Education Doctoral Fellows (the Second Cohort) at the Utah State University, in 2007, while watching the beautiful landscape of America, with new lyrics in the old melody of *Rule Britannia, Britannia Rule the Waves*, a British patriotic song. I completed the second and third part on Tuesday, September 25, 2014. I have selected this new song as the Official Hymn of the SCHLAR STEAM K12 Plus Website and do hereby share it with friends in the STEAM communities. To familiarize yourselves with the original melody, go to the following Youtube videos: (1) [Emilia Dalby aged 9 2004 Rule Britannia](#), and (2) [Rule Britannia \(Royal Navy version\)](#).

When America first
at heaven's
command, at
heaven's command,
Arose between the
two great oceans,
Arose arose
between the two
great oceans,
This was the
Mandate, the

The nations, not so
enlightened as
thee, so
enlightened as
thee,
Must in their turn to
ignorance fall,
Must in their turn,
in their turn to
ignorance fall,
While thou shalt

Still more upward-
mobile shalt thou
rise, shalt thou rise,
More innovative in
thy endeavors,
More innovative,
more innovative in
thy endeavors,
Endowed, endowed
with more gifted
souls and minds,

Mandate of
Heavens,
And Michael the
Archangel made
this call:
Lead America!
America lead in
STEAM!
We Yankees
never, never shall
be left behind!
Lead America!
America lead in
STEAM!
We Yankees
never, never shall
be left behind!

prosper, shalt
prosper even
more,
The noble
inspiration for them
all.
Lead America!
America lead in
STEAM!
We Yankees
never, never shall
be left behind!
Lead America!
America lead in
STEAM!
We Yankees
never, never shall
be left behind!

A land of talented
servants to
become.
Lead America!
America lead in
STEAM!
We Yankees
never, never shall
be left behind!
Lead America!
America lead in
STEAM!
We Yankees
never, never shall
be left behind!

THE ORIGINAL LYRICS OF *RULE BRITANNIA*, THE MOST POPULAR BRITISH PATRIOTIC SONG

Originally co-written by Thomson and David Mallet

When Britain fi-i-
irst, at heaven's
command,
Aro-o-o-ose from
out the a-a-a-zure
main,
Arose, arose, arose
from out the a-
azure main,
This was the
charter, the charter
of the land,

The nations, no-o-
o-o-ot so blest as
thee,
Must i-i-i-i-in their
turn, to ty-y--yrants
fall,
Must in their turn,
to ty-y-rants fall,
While thou shalt
flourish, shalt
flourish great and
free,

Still more maje-e-
estic shalt thou
rise,
More dre-e-e-e-
eadful from each
foreign stroke,
More dreadful,
dreadful from each
foreign stroke,
Loud blast above
us, loud blast that
tears the skies,

And guardian a-a-
angels sang this
strain:

Rule Britannia!
Britannia rule the
waves,
Briton never,
never, never shall
be slaves.

Rule Britannia!
Britannia rule the
waves.
Britons never,
never, never shall
be slaves.

The dread and e-e-
e-e-nvy of them all.

Rule Britannia!
Britannia rule the
waves. Britons
never, never,
never shall be
slaves.

Rule Britannia!
Britannia rule the
waves.
Britons never,
never, never shall
be slaves.

Serves but to ro-o-
o-ot thy native oak.

Rule Britannia!
Britannia rule the
waves. Britons
never, never,
never shall be
slaves.

Rule Britannia!
Britannia rule the
waves. Britons
never, never,
never shall be
slaves.



This website is proudly sponsored and managed by **SuniSea Products + Graphics**, a socially responsible and ecologically friendly product and graphic design studio.

Freedom and opportunities! You will have the right to a high quality K12 science, technology, engineering, arts and mathematics (STEAM) education!

¡Libertad y oportunidades! ¡Usted va a tener el derecho a una K12 educación de alta calidad en ciencia, tecnología, ingeniería, artes y matemática (CTIAM)!

自由和机会！你们将拥有接受高质量的、贯穿幼儿园到中小学阶段的科学、技术、工程、艺术和数学教育的权利！