Brittany Schick

Librarian II

North Lake College

Kent Seaver

Director of Learning Resources

North Lake College

Libraries and STEM

- Librarians can play an active role in faculty research and enhancing public understanding of science. Now more than ever before, the nation's scientists are engaging in outreach activities focused on the pre-college pipeline in order to ensure that a continuing supply of students enter college-level science disciplines and education programs, and that schools graduate an informed citizenry appreciative of the sciences. These outreach requirements present new opportunities for librarians to support faculty research and to further integrate libraries into the teaching and learning mission of their institutions.

- ***Melanie Sellar, Marymount College and Jeanine Scaramozzino,***
- ***California Polytechnic State University, San Luis Obispo,***
- ***ALA 2009 Annual Conference: Chicago, IL, July 9, 2009***

Libraries and STEM

- **These program benefits the faculty because the library**:
- provides academic and logistical support
- finds an additional audience for faculty member research
- aids in translating research into appropriate activities for audience
- helps cultivate appreciation of research/discipline
- leverages their instructional experience working with diverse audiences

- **This program benefits the library because it provides another means:**
- to contribute to the institution's learning mission
- to support the institution's research activities
- to help the institution compete for federal grant money
- by which to position the librarians as educators

Libraries and STEM

- ***Reimagining the Role of School Libraries in STEM Education: Creating Hybrid Spaces for Exploration***
- *Author(s): Mega M. Subramaniam, June Ahn, Kenneth R. Fleischmann, Allison Druin*
- *Reviewed work(s):*
- *Source: The Library Quarterly, Vol. 82, No. 2 (April 2012), pp. 161-182*
- *Published by: The University of Chicago Press*
- *Stable URL: http://www.jstor.org/stable/10.1086/664578 .*
- *Accessed: 19/03/2012 22:38*

Libraries and STEM

In this role as an instructional partner, the librarian collaborates or partners with classroom and STEM subject teachers to teach and integrate different literacy practices into the curriculum. Academic librarians also build connections between student information/research needs, curriculum content, learning outcomes, and information resources as they support the overall educational community in the school.

Libraries and STEM

- Despite these unique characteristics of school libraries and librarians, there has been little discussion about utilizing these resources to promote STEM learning and innovation.

- School policies may hinder student access to potential learning technologies, but school librarians with technological experience can have an influence in changing these policies

- Many US schools have ill formed policies on students' social media access due to a lack of experience and understanding of the learning potential of these tools

- School librarians can play a vital role in educating administrators and fellow teachers on the potential positive uses of social technologies, online communities, and virtual worlds to enhance STEM learning.

- ***Jeffrey DiScala, Mega Subramaniam (2011) Evidence Based Practice: A Practice Towards Leadership Credibility Among School Librarians. In School Libraries Worldwide 17 (2).***

Libraries and STEM In Action

- Another area in which academic librarians can provide a voice is through training and modeling innovative technology-enhanced practices to their fellow teachers. This is being done at ***Claremont College in California***.

- Information Literacy Instruction (ILI) Services Works to increase understanding of STEM programs and curricula and to integrate ILI across the campuses.

- Serve as Campus Liaison and Subject Specialist Services Develops collaborative ongoing relationships with faculty, students, and staff to support teaching, learning, and research with STEM communities across the Claremont Colleges related to the physical sciences.

- Selection and Management of Information Resources Develops STEM electronic and print collections that reflect the short and long term teaching and research needs of the Claremont Colleges science community (including biology, chemistry, computer science, engineering, geology, neuroscience, mathematics, and physics).

Libraries and STEM In Action

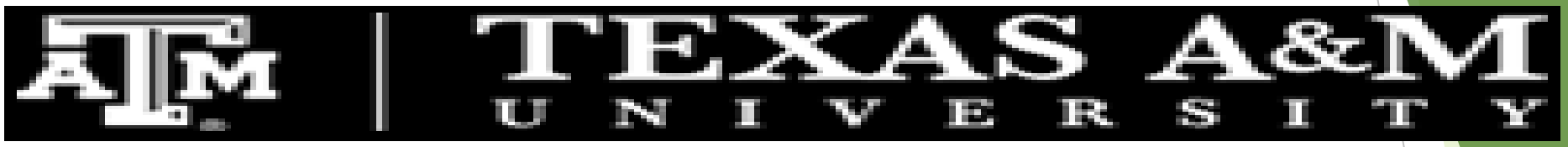
CALIFORNIA STATE UNIVERSITY
FULLERTON

- Recognizing that Science, Technology, Engineering, and Math (STEM) education is essential to an ever-expanding range of jobs, the Orange County Business Council (OCBC), through its Workforce Development Committee, has placed special focus on STEM education. Rapidly developing industries in Orange County, including biotechnology, bioinformatics, health services, energy and environmental technology, and green technology will require a highly educated workforce with advanced skills in technology.

- Academic librarians can be effective allies in helping young people connect their engagement with technology and the Internet with their learning in school. Libraries can be structured to be an ideal hybrid space for them to translate their interest in media and technology to STEM learning.

- The presence of online communities and powerful tools, such as social network sites, virtual worlds, and video games, now afford the opportunity to explore how such a hybrid space can be designed to help young people safely bridge the boundaries between their personal and science-learner identities. School library professionals have the unique opportunity to experiment and champion the use of new media tools to deeply engage students in STEM areas.

Libraries and STEM In Action



- The Texas A&M University Libraries are championing diverse learning initiatives by providing free Open Access scholarly literature to students and teachers at Roscoe Collegiate, an early college/STEM academy in the rural West Texas town of Roscoe.

- “In order to support the ability of the teachers to engage their students in research projects, they [Roscoe Collegiate] needed access to a quality library,” said Dr. Bruce Herbert, director of the Office of Scholarly Communication and professor. “They invited me to be part of their advisory team and help them make this transformation.

- ***Texas A&M Press Release, July 16, 2014***

Libraries and STEM

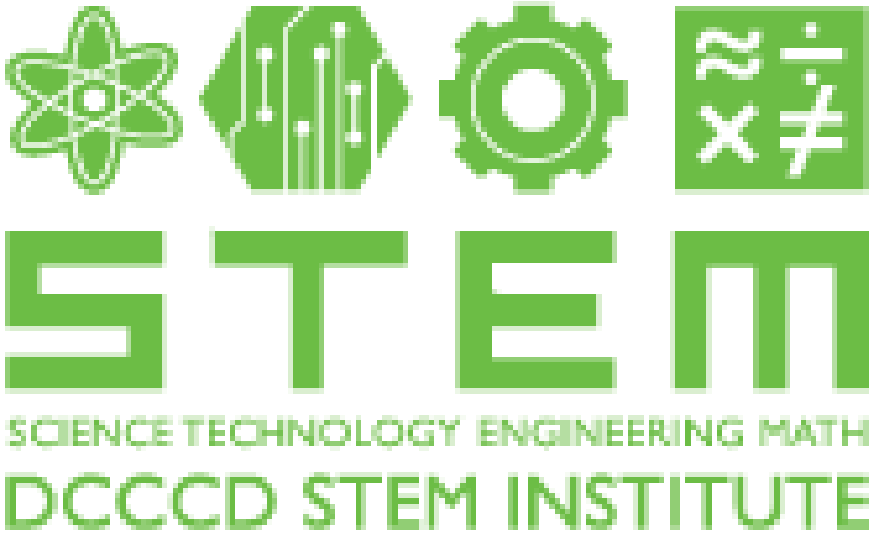
- While there are numerous obstacles to implementing new teaching and learning technologies/strategies to promote STEM engagement in formal classrooms, school library settings offer a uniquely different space that might foster significant innovations in that:

- School library's are often the hub of technology and information resources for students.

- In addition, these spaces are often less tied to the pressures faced in formal classrooms, such as the need to adhere to standardized tests or requirements.

DCCCD STEM INSTITUTE

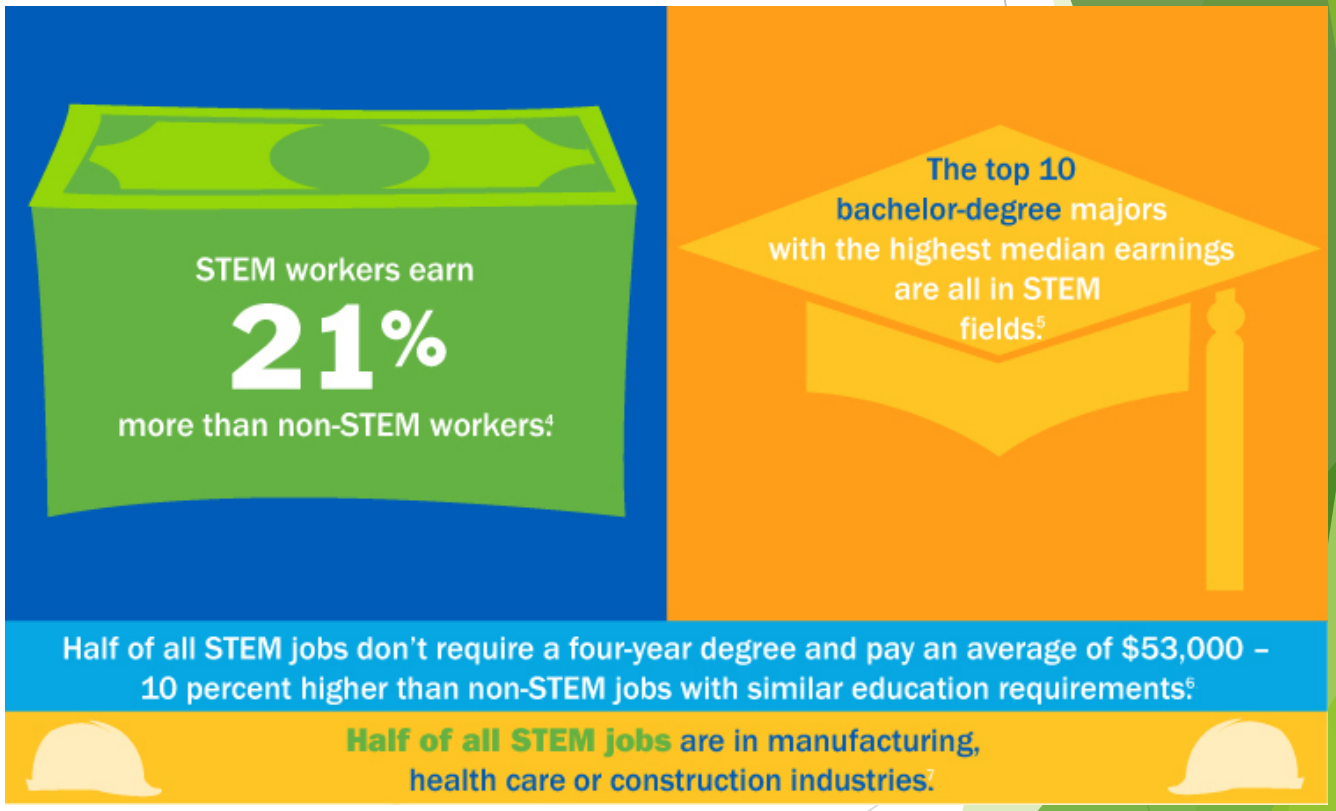
- DCCCD STEM Institute provides support for students interested in non-clinical science, technology, engineering and math.
- North Lake College had 14 students named STEM Scholars by the DCCCD Institute for the 2014-2015 school year.



http://www.foundation.dcccd.edu/stem-institute

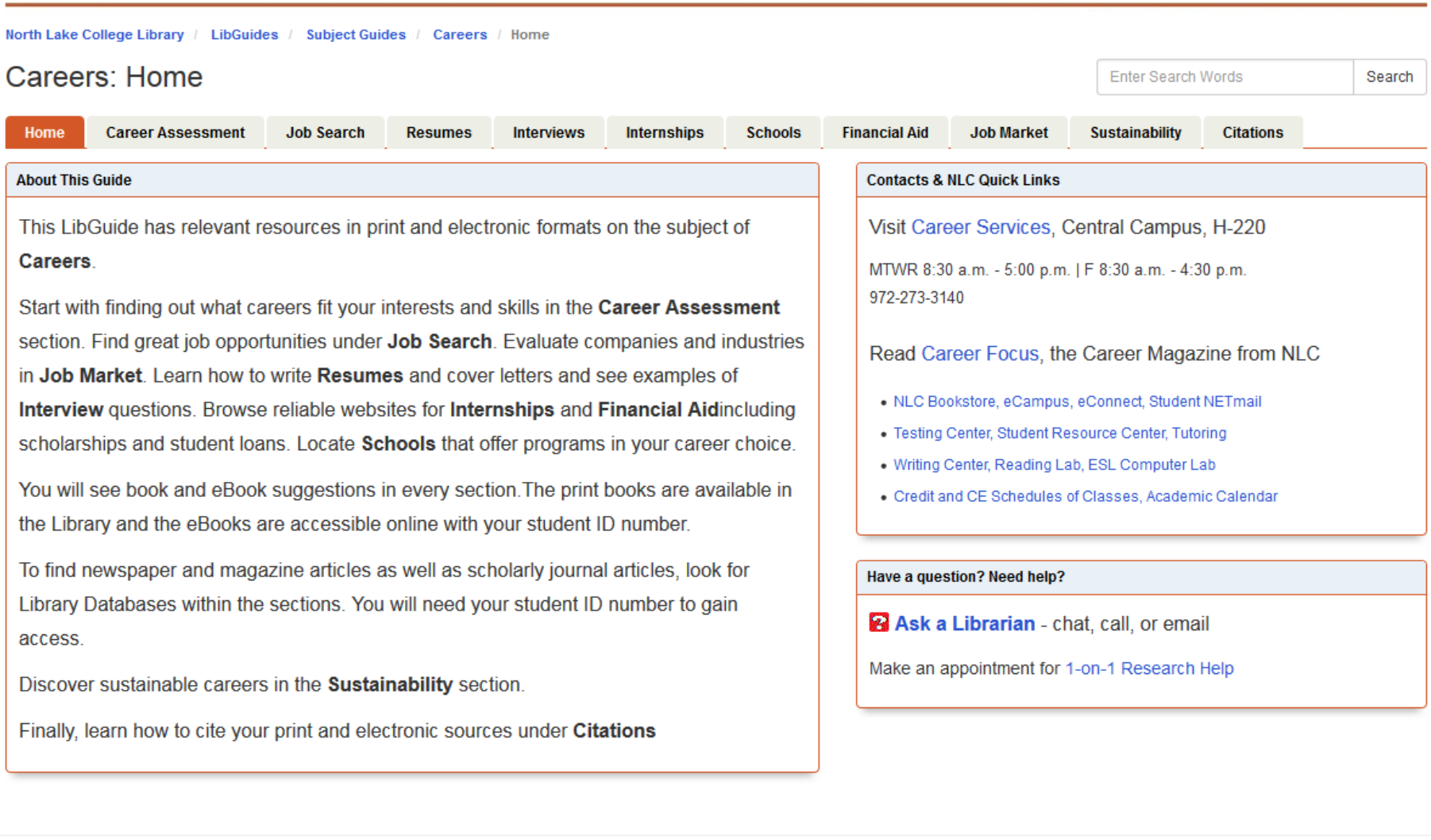
CAREER DEVELOPMENT

- NLC Library partners with Career Services on campus to support students in their long term career goals.
- Students were able to meet with STEM professionals in the library during the Fall 2014 Career Week.
- NLC Librarians developed a Career LibGuide.



Source: https://genius-consumersenergy.com/why-stem/

Career LibGuide



North Lake College Library / LibGuides / Subject Guides / Careers / Home

Careers: Home

Enter Search Words | Search

Home | Career Assessment | Job Search | Resumes | Interviews | Internships | Schools | Financial Aid | Job Market | Sustainability | Citations

About This Guide

This LibGuide has relevant resources in print and electronic formats on the subject of **Careers**.

Start with finding out what careers fit your interests and skills in the **Career Assessment** section. Find great job opportunities under **Job Search**. Evaluate companies and industries in **Job Market**. Learn how to write **Resumes** and cover letters and see examples of **Interview** questions. Browse reliable websites for **Internships** and **Financial Aid**including scholarships and student loans. Locate **Schools** that offer programs in your career choice.

You will see book and eBook suggestions in every section.The print books are available in the Library and the eBooks are accessible online with your student ID number.

To find newspaper and magazine articles as well as scholarly journal articles, look for Library Databases within the sections. You will need your student ID number to gain access.

Discover sustainable careers in the **Sustainability** section.

Finally, learn how to cite your print and electronic sources under **Citations**

Contacts & NLC Quick Links

Visit Career Services, Central Campus, H-220

MTWR 8:30 a.m. - 5:00 p.m. | F 8:30 a.m. - 4:30 p.m.
972-273-3140

Read Career Focus, the Career Magazine from NLC

- NLC Bookstore, eCampus, eConnect, Student NETmail
- Testing Center, Student Resource Center, Tutoring
- Writing Center, Reading Lab, ESL Computer Lab
- Credit and CE Schedules of Classes, Academic Calendar

Have a question? Need help?

Ask a Librarian - chat, call, or email

Make an appointment for 1-on-1 Research Help

North Lake College Library --- **Reference Desk:** (972) 273-3401 --- **Circulation Desk:** (972) 273-3400 --- My Library Account
5001 N MacArthur Blvd - Irving, TX 75038 | Bldg. L - Level 2 --- Mon-Thu 8 am - 9 pm | Fri 8 am - 4 pm | Sat 9 am - 1 pm | Sun CLOSED

Library Subject Guides

- ***Advantages of Subject Guides**:*

  - Content/formatting controlled by the librarians and changes made immediately.
  - Easy customization meets the needs of multiple assignments, faculty or classes.
  - Comprehensive, one-stop place to find information on a subject in different formats (pictures, links, videos, newsfeeds, surveys, instant chat, etc., all in one page).
  - Allows collaboration amongst faculty and librarians (even ones from other institutions or colleges).

Library Instruction

- Educate students on the use of electronic sources and Internet searching.
  - Along with changes in technology and communication comes the need to incorporate information literacy into student learning. More than half of academic libraries (55 percent) report information literacy student outcomes. *(Research and Statistics on Libraries in 2013, Kathy Rosa)*
- Create LibGuides for the purpose of students becoming comfortable with research.
  - Organize meetings with faculty and staff to ensure that the curriculum matches LibGuides
  - Use as a tool to promote information literacy and library instruction

Chemistry LibGuide

North Lake College Library / LibGuides / Subject Guides / Chemistry / Chemistry

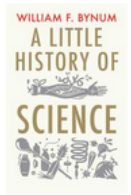
Chemistry: Chemistry

Enter Search Words | Search

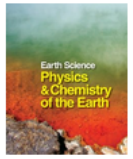
Home | Chemistry | Career Resources | Sustainability | Citations

Print Books Available in the Library

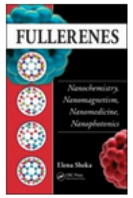
Search for more chemistry books in our Library Catalog.



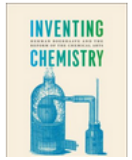
A Little History of Science by William Bynum
Call Number: Q125.B98 2012
ISBN: 9780300136593
Publication Date: 2012-11-06



Earth Science: Physics and Chemistry of the Earth by Joseph L. Spradley
Call Number: QE 26.3 .E27 2012
ISBN: 9781587659898
Publication Date: 2012-03-01



Fullerenes by Elena Sheka
Call Number: QD 181 .C1 S44 2011
ISBN: 9781439806425
Publication Date: 2011-02-16



Inventing Chemistry by John C. Powers
Call Number: QD 15 .P69 2012
ISBN: 0226677605
Publication Date: 2012-04-02

Articles Available in the Databases

Access more databases like these by selecting "Chemistry" as a course in the Databases Page

- General Science Full Text
- Omni Full Text: Chemistry
- Salem Press Science

Websites

- Chemical Education Digital Library
  Provided by the American Chemical Society (ACS) and the Journal of Chemical Education (JCE). The ChemEd DL offers browsable access to multiple collections and services from the the Journal of Chemical Education DLib and the American Chemical Society Education Division
- Chemistry Portal at NIST
  The National Institute of Standards and Technology (NIST) develops the technology, measurement methods, and standards to address the needs of the chemical industry.
- ChemTube3D
  ChemTube3D contains interactive 3D animations and structures, with supporting information for some of the most important topics covered during an undergraduate chemistry degree.
- FDA: Science and Research
  Find FDA staff research abstracts, links to full text, clinical trials, and information on field science and laboratories.
- Green Chemistry
  The US Environmental Protection Agency's program for sustainable chemistry.
- Toxic Substances Portal

Libraries and STEM

- Librarians may also be the key change agents to develop and implement media-enhanced education because they are (a) often leaders of media programs in schools, (b) best equipped to spread an educational program through their existing collaboration with teachers across an entire school, and (c) able to connect young people to resources that bridge in and out of school contexts.

- ***Mega M. Subramaniam***
- **Assistant Professor, College of Information Studies**
- **University of Maryland, College Park**
- ***The Library Quarterly, April 2012***