

Jennifer Clemons Ed. D.

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Professional Experience

Penn State University

Associate Teaching Professor

November 2024-current

John A. Dutton e-Education Institute

College of Earth and Mineral Sciences

- Teaching courses in the online Energy and Sustainability Policy Bachelor's Degree Program
- Teaching courses in the online Renewable Energy and Sustainability System Master's Degree Program

Center for Renewable Energy Advanced Technological Education

CREATE Energy National Center

CO-PI

July 2022-current

- CO-PI for the National Energy Center supported by NSF Grant # 2201631
- The mission of the CREATE Energy Center is to produce a skilled technical workforce necessary to implement the transformation of the world's energy industries.
- Member of the Women in Energy Initiative to help recruit more young women and under-represented minorities into the Energy Sectors
- Facilitator of Monthly Coffee Hours to virtually discuss topics of interest to the Energy faculty around the country.
- Hosted/ teaching three-day Energy Institute for teachers and faculty to learn about Energy Efficiency and Solar Summer 2019 and 2023.

Delaware Technical Community College Terry Campus

Department Chair for Energy Technologies

Jan 2012-Oct 2024

- Overseeing Energy Management, Renewable Energy Solar and Building Automation Systems A.A.S. Programs
- Managing Faculty and Staff (full and part-time) within the department
- Advising Students
- Teaching Solar, Photovoltaic, Alternative Energy, Sustainability and Energy Policy Courses
- Overseeing Solar specific of TAACCCT 1 grant (~\$500,000) from the Department of Labor
- Developed and led a study abroad trip to Denmark on Alternative Energy Summer 2012 and 2013
- Participated as support faculty for study abroad trip to Japan in Math Education Summer 201 and support faculty for study aboard trip to Switzerland on Alternative Energy Summer 2016
- Developed and implemented new degree program, Building Automation Systems (BAS) which began in Fall 2014

- Hosting Advisory Board meetings, seeking input from industry partners around the Delmarva Peninsula.
- Overseeing Building Automation Systems component of TAACCCT 4 grant (~\$800,000) from the Department of Labor
- Completed Solar Professionals Certificate Program from Solar Energy International. Certificates awarded in Battery-Based Photovoltaic Systems and Solar Business and Technical Sales
- Completed Instructional Design Certificate from Center for Creative Instruction and Technology (April 2015)
- Faculty Senate President- May 2017- June 2019

Delaware Technical Community College Terry Campus

Instructor Renewable Energy Solar

July 2011-Dec 2011

- Taught Sustainability hybrid course to both day and night sections
- Facilitated lessons via distance learning with partner college (Lane Community College) in Eugene Oregon.

Cengage Learning

April 2022- February 2023

Author

- Updated the 6th edition of the Text “Energy: Its Use and the Environment”
- Wrote/edited 7 chapters in 2024 edition including “Energy Mechanics”, “Energy and Power”, “Energy from Fossil Fuels”, “Electricity: Circuits and Superconductors”, “Electromagnetism and the Generation of Electricity”, “Energy Storage: Batteries, Electric Vehicles and Fuel Cells”, and “Biomass: From Plants to Garbage.”

Unity College Distance Education

Summer 2020- Current

Adjunct and Course Developer

- Developed course “RNRG 201: Renewable Energy: Science, Technology and Management”: Summer 2020
- Taught Renewable Energy online courses: RNRG 101: Introduction to Green Energy: Politics and Implementation: RNRG 201: Renewable Energy: Science, Technology and Management” : EVPC 310: “Environmental Issues: Impacts of Renewable Energy on Marine Systems”

Salem Community College

July 2009-May 2011

Instructional Chair Sustainable Energy Technology

- Developed and taught new courses in Sustainable Energy beginning Fall 2009
- Developed new Associates Degree in Sustainable Energy beginning Fall 2009
- Developed and taught 5 sections of Energy the Environment and Society over 4 semesters
- Developed and taught lab courses on Wind Energy Technology and Photovoltaic Solar Energy
- Taught 5 sections of Introduction to Chemistry over 4 semesters
- Taught Biology 101 and Applied Chemistry and Physics
- Successfully completed 50.0 NABCEP training hours at Solar Energy International; “PV 101: Solar Electric Fundamentals and Grid-Direct Design”

Gloucester Community College
Adjunct Instructor

September 2010- Dec 2012

- Introductory Chemistry hybrid course, one section each semester Fall 2010-Fall 2012 and two sections Spring 2011
- Elementary Algebra hybrid, Fall 2010

Cumberland Community College
Adjunct Instructor

Jan 2011- May 2011

- Principles of Math, Spring 2011

Franklin Institute
Summer Science Camp Counselor

Summer 2011 and 2012

- Taught science lessons relating to museum exhibits for summer camps
- Worked with primarily pre-K children

Penn State University
Director of Energy Camp

November 2008- June 2009

- Directing week long camp scheduled for June 2009
- Develop curriculum for summer camp based on energy for 27 5-8th graders on energy and alternative fuels

Penn State University
Teaching Assistant

January 2009-May 2009

- Online course of 121 returning students in the World Campus in Environmental Protection and Energy Conservation
- Facilitate online discussions regarding course content and current environmental topics

Penn State University
Graduate Fellow

August 2007-June 2009

Pennsylvania Transportation Institute

- Required work of 15 hours per week teaching in area K-12 schools
- Supported by the National Science Foundation
- Designed hands-on activities for K-12 students on topics such as insulation, simple machines and acid rain.
- Conducted lessons and interactive learning sessions in K-12 classrooms. Organized and performed tours of PSU facilities, with hands-on experience, to K-12 students
- Assisted in the organization of a summer teacher workshop (for K-12 educators) held at PSU in August 2008. Presented workshops on fuel cells and combustion for the teachers to take back into their classrooms

Education

Doctor of Education in Educational Leadership

University of Delaware

Graduation June 2019

Current GPA 3.82

Thesis Topic: Professional Development Resources for Dual Enrollment Teachers

Relevant Course Work:

Curriculum Planning and Design Educational Technology Foundations
Educational Policy and Governance Organizational Prbm Analysis & Planning

Learning Tech. Across Curriculum Research in Education Decision Making
Teacher Leadership in Ed Policy Program Evaluation in Education
Collection and Analysis of Data for Decision Making

Master's Degree in Energy and Geo-Environmental Engineering

Pennsylvania State University

Graduated August 2009

GPA 3.71

Thesis Topic: Nickel-Based Adsorbents for the Desulfurization of
Transportation Fuels for Fuel Cell Applications

Relevant Course Work

Carbon Petrology

Problems in Fuel Science

Fuel Cells

Carbon Reactions

Energy in Modern Society

Energy Economics

Surface Chemistry

Science Education

Applied Chromatography and Spectrography

Bachelor's Degree in Chemical Engineering/ Energy and Fuels Option

Pennsylvania State University

Graduated May 2002

Awarded Milco Engineering Scholarship

Honors and Awards

Awarded 2024 Mid-Career Award for women in Energy by Clean Energy Education and Empowerment (C3E) led by the U.S. Department of Energy. Awarded the Education award at Stanford University in November 2024.

Selected to attend the Career Education in Renewable Energy Technologies (CERET-NSF funded) workshop on Biofuels at Shoreline Community College in Seattle, WA August 2015

Selected to attend Building Efficiency for a Sustainable Tomorrow (BEST) Center Workshop on High Performance Building Technician Education at Lawrence Berkeley National Lab in Oakland, CA January 2015

Selected to attend the Career Education in Renewable Energy Technologies (CERET-NSF funded) workshop on Photovoltaics- Level 2 at Solar Energy International's headquarters in Paonia, CO, July 2014

Selected to attend the Career Education in Renewable Energy Technologies (CERET-NSF funded) workshop on Photovoltaics at Solar Energy International's headquarters in Paonia, CO, July 2012.

Selected to attend the Sustainable Energy Education Training (SEET) workshop for Energy Educators, June 2011 at the Colorado School of Mines.

Awarded Robert and Leslie Griffin award for Outstanding Graduate Student in Energy and Mineral Engineering for 2008

Awarded NSF Fellowship Graduate Research Education in Advanced Transportation Technologies (GREATT) in August 2007

Awarded Frank and Lucy Rusinko Scholarship for Outstanding Graduate Student in Energy and Geo-Environmental Engineering for 2007

Selected as one of 35 attendees from a group of over 730 applicants to attend the NSF ADVANCE Workshop on Negotiating the Ideal Faculty Position at Rice University, October, 2006.

Awarded the Richard J. Kokes Travel Award for paper submitted to the North American Catalysis meeting in Philadelphia, 2005

Awarded Energy and Geo-Environmental Engineering Outstanding Teaching Assistant Award for 2004

Community Service

Franklin Institute: Science Presenter September 2009- March 2020

- Science Museum Presenter, over 1,000 hours of service
- Educating guest at a variety of hands on stations
- Storybook Science Presenter (pre-K programs)
- Volunteer Program discontinued due to pandemic

Science Lions: Science Education Outreach Program member 2004-2008

- Volunteer organization dedicated to fostering science and engineering interest in K-12 students throughout Pennsylvania.
- The purpose of which is to perform interactive science demonstrations throughout central Pennsylvania in collaboration with local educators.
- Board Positions held
 - President: March 2006 - March 2008
 - Scheduling Chair: 2006
 - Co-Chair of Demonstration Development Committee: 2005-2006

Graduate Student Council:

- Representative for Energy and Geo-Environmental Engineering to the Earth and Mineral Sciences Graduate Council. Fall 2005-Fall 2006.
- The purpose is to advocate in the best interests of the Earth and Mineral Science graduate student body as a whole and to facilitate the implementation of policies deemed beneficial to the graduate student population.

Upward Bound Math and Science:

- The Upward Bound Math and Science program allows the Department to fund specialized Upward Bound math and science centers.
- The program is designed to strengthen the math and science skills of participating students.
- The goal of the program is to help students recognize and develop their potential to excel in math and science and encourages them to pursue postsecondary degrees in these fields.
- Designed and several different taught courses on quantification of transportation fuels and catalysis during in the summers 2003, 2004 and 2005, for the Summer Experience in Earth and Mineral Sciences (SEEMS).

Clean Energy Expo: Planning Committee for the Energy Institute Booth and Science Lions Booth for 2006.

Pennsylvania Junior Academy of Science: Judge for Science Fair State Competition 2004, 2005, 2006 and 2007.

EOS Therapeutic Riding Center: Physical Therapy Center for children and adults with handicaps on horseback.

Papers and Publications

Clemons, J., Ma, X., Song, C., "Improvement of Desulfurization Capacity of Nickel-based Adsorbent for Jet Fuel by Adding Alkanol." *American Chemical Society Division Petroleum Chemistry Preprints*, **2007**,

Clemons, J., Ma, X., Song, C., "Sulfur Removal of Commercial Transportation Fuels Over a Nickel-Based Adsorbent." *American Chemical Society Division Petroleum Chemistry Preprints*, **2005**, 50 (4), 439.

Eser, S., Wang, G., and Clemons, J. (2004). Chapter 7: Molecular Constitution, Carbonization Reactivity, and Mesophase Development from FCC Decant Oil and Its Derivatives. (pp 95-111). Washington D.C.: American Chemical Society.

Clemons, Velu, S., Ma, X., Song, C., "Adsorptive Desulfurization of Transportation Fuels over Nickel-Based Adsorbents Derived from Layered Double Hydroxides." *American Chemical Society Division Fuel Chemistry Preprints*, **2004**, 49 (2), 575.

Bickford, E., Clemons, J. et al. "On the adsorption affinity coefficient of carbon dioxide in microporous carbons." *Carbon*, **2004**, 42, 1867 .

Clemons, J., Wang, G., Eser, S., "Molecular Constitution, Carbonization Reactivity, and Mesophase Development from FCC Decant Oils." *American Chemical Society Division Fuel Chemistry Preprints*, **2003**, 48 (1), 108.

Presentations

Graduate Students & Teachers Work Together to Introduce Fundamental STEM Concepts to K-12 and Fuel Cells with hands on activities: Presented 6 November 2008 at Technology Educators Association of Pennsylvania Annual Meeting in Camp Hill PA.

Vision: How we Perceive Depth: Presented 5 December 2007 at Pennsylvania Science Teachers Association Convention in Hershey, PA

Science Lions: Making Science Cool for Kids though Hands on Learning: Presented 3 February 2007 at the International Association for Science, Technology and Society Annual Meeting in Baltimore, MD.

Sulfur Removal of Commercial Transportation Fuels Over a Nickel-Based Adsorbent: Presented 31 August 2005 at American Chemical Society National Meeting in Washington DC

Adsorptive Desulfurization of Gasoline and Diesel Over Nickel Based Adsorbents: Poster Presented 23 May 2005 at North American Catalysis Society National Meeting in Philadelphia

Adsorptive Desulfurization of Transportation Fuels Over Nickel Based Adsorbents Derived from Layered Double Hydroxides: Poster Presented 25 October 2004 at Hydrogen Day at Penn State

Adsorptive Desulfurization of Transportation Fuels Over Nickel Based Adsorbents Derived from Layered Double Hydroxides: Presented 22 August 2004 at American Chemical Society National Meeting in Philadelphia, PA.