**PAUL L. CLEMENS**
paul.clemens@hccs.edu

## EDUCATION

Ph.D. Environmental Toxicology, Dept. of Chemistry – Texas Southern University, Houston, TX
M.S. Chemistry – Arizona State University, Tempe, Arizona
B.S. Chemistry – Oregon State University, Corvallis, Oregon

## EXPERIENCE

| | |
|---|---|
| 8/18 - Present | Chemistry Professor, Houston Community College, Houston, Texas |
| 8/15 – 8/18 | Associate Chair, Chemistry, Houston Community College, Houston, Texas |
| 5/04 – Present | Chemistry Professor (adjunct), EduKan on-line, Great Bend, Kansas |
| 1/09 – 8/15 | Chemistry Professor, Houston Community College, Houston, Texas |
| 8/10 – 5/12 | Chemistry Professor (adjunct), College of the Mainland, Texas City, Texas |
| 1/05 - 6/12 | Coatings Formulation and Corrosion Prevention Consulting, Houston, TX |
| 8/05 – 8/09 | Technical Chemical Sales, Bech Chem, The Woodlands, Texas |
| 9/03 – 8/05 | Department Chair, Chemistry, Barton County Community College, Great Bend, Kansas |
| 9/02 – 8/03 | Chemistry Professor, Eastern Oregon University, La Grande, Oregon |
| 6/98 – 7/02 | President / Director, R&D, Clemcoat Inc., Vancouver, Washington |

## REPRESENTATIVE ASSIGNMENTS

Position of: Chemistry Professor, Houston Community College

- Responsible for instruction of chemistry 1105 (general introduction chemistry laboratory for non-science majors), 1305 (general introduction chemistry lecture for non-science majors, both online and face-to-face delivery), 1111 (inorganic general chemistry I laboratory for science and engineering majors), 1311 (inorganic general chemistry I lecture for science and engineering majors, 1412 (inorganic general chemistry II lecture and laboratory for science and engineering majors), 2423 (organic chemistry I lecture and laboratory), and 2425 (organic chemistry II lecture and laboratory). Utilize open educational resources as primary texts for courses taught. Employ theory of analytical equipment (FTIR, UV-Vis, Mass Spectroscopy, and NMR) into organic chemistry laboratories. Serve on the Z-Degree committee (initiative to reduce student cost by utilizing open educational resources in the classroom), Grade Appeal Committee, Standardized Laboratory Committee, Program Committee, and Instructional Service Awards Selection Team. Attended Strengthfinders, Houston, TX, 2019. Current and past five years course syllabi may be viewed at: https://learning.hccs.edu/faculty/paul.clemens

Position of: Associate Chair, Houston Community College

- Responsible for supporting the Department Chair in all duties assigned. Demonstrated strong ethical leadership with the successful supervision of 100+ faculty members. Directed and worked with program coordinator to provide innovative program and curriculum goals and rigor standards. Ensured that program degree plans were current, correct, and readily available for students. Actively advocated for HCC by creating fresh and novel mechanisms for increased student enrollment and contact hour generation. Provided leadership in recruiting, screening, and interviewing faculty, both full-time and adjunct. Served as Hiring Committee Chair. Encouraged professional growth and maintained morale among faculty. Provided orientation and professional development opportunities for faculty and staff. Served as liaison between faculty and administration. Was accountable for review and making recommendations regarding complaints and grievances of faculty and students. Resolved student complaints and

faculty disputes efficiently and appropriately. Worked collaboratively with district offices of Distance Education in the creation of on-line and hybrid courses. Demonstrated exemplary leadership and initiative by spearheading relationship development between HCC and OpenStax/Rice University. Served on the OER steering committee and pioneered/piloted use of OER in General Chemistry (Z-Degree initiative). Served as Secretary for Chemistry Department OER Development & Implementation Committee. Authored introductory chemistry OER labs. Established and maintained articulation and communication with internal and external entities. Participated in outreach activities, i.e., trade associations, partnerships with universities, business/industry, etc. My professional development activities included attending The Asia Pacific Coatings Show, Bangkok, Thailand, 2016, attending OpenEd16 Conference, Richmond, VA 2016, Covey Training: Leading at the Speed of Trust, Emergenetics Training: Leading with the Brain in Mind, SURGE team building, Houston, TX, 2017, REEMS REU, 22nd Annual Green Chemistry & Engineering Conference, Portland, OR, 2018. I participated in student advisement and counseling and maintained a rich experience teaching full semesters at many different locations including: Northline, Central, Missouri City, Felix Morales, Felix Fraga, Spring Branch, Stafford, Alief-Hayes, and West Loop. Classes taught included chemistry 1305 (general introduction to chemistry for non-science majors), 1411 and 1412 (inorganic general chemistry I and II for science and engineering majors), 1411 hybrid, 1412hybrid, and 1413 hybrid (on-line based chemistry courses), 2423 and 2325 (organic chemistry I and II). I initiated collaborative partnership between Chemistry Department and The Material Science Center of Excellence, one of the Gulf Coast regions leading providers of technical material science education. The goal of the partnership was to learn how to bridge the gap between academic programs and workforce programs, to provide the students with the best opportunities from both programs, including professional networking, internships, job placement, and scholarships. Classes taught include Materials 1301 (Introduction to Metallurgy) and Materials 1313 (Introduction to Corrosion). I was awarded the Outstanding Leadership Award for exemplary teamwork as associate chair, chemistry, August, 2018.

Position of: Chemistry Professor, Houston Community College

- Responsible for instruction of chemistry 1405 (general introduction to chemistry for non-science majors), 1411 and 1412 (inorganic general chemistry I and II for science and engineering majors), 1411 hybrid, 1412 hybrid, and 1413 hybrid (on-line based chemistry courses), 2423 and 2325 (organic chemistry I and II), environmental science 1301 (study of natural resources, energy, pollution, and natural disasters for non-science majors), and engineering 1201 (introduction to engineering). Mentored for undergraduate STEM research. Actively participated in the QEP program to create a new learning module that has been implemented system wide to encourage problem-based learning. Served on the Program Committee.

Position of: Chemistry Professor, Edukan

- Responsible for development and instruction of on-line chemistry 177 and 178 (inorganic general chemistry for science and engineering majors). These chemistry courses stress the conceptual and mathematical approach to understanding inorganic general chemistry. The students taking these courses are usually declared chemistry, physics, engineering, pre-med., and etc. majors. Also, on-line introductory environmental science 130 and 131 lecture and laboratory.

Position of: Chemistry Professor, College of the Mainland

- Responsible for instruction of chemistry 1405 and 1405 hybrid (general introduction to chemistry for non-science majors, lecture and laboratory).

Position of: Coatings Formulation and Corrosion Prevention Consulting, Houston, TX

- Provided technical formulation and corrosion prevention support to both government and industrial clients. Developed products include formulated coatings, paints, inks, sealants, elastomers, adhesives, thermoplastics, fire resistant/high temperature service polymers, composites, and industrial lubricants and greases. Additional services included forensic product failure analysis, physical testing and characterization programs, and the facilitation of modifications to manufacturing processes. Additionally, I authored technical literature, MSD sheets, and product literature.

Position of: Technical Chemical Sales, Bech Chem

- Development and support of distribution networks for sales of raw materials into the paint, coatings, elastomer, ink, sealant, composite / cast goods, and industrial lubricants. Supervision of 5 employees. Provided technical formulation and corrosion prevention support to customers.

Position of: Chemistry Chair, Barton County Community College

- Responsible for management of the chemistry program. Teaching duties include instruction of Fundamentals of Organic and Biochemistry and College Chemistry I, II. Published three laboratory manuals to accompany Fundamentals of Chemistry and College Chemistry I, II. Developed and implemented web based on-line College Chemistry I, II (through EduKan). Served as a student advisor, served on Learning and Instruction Integrity Committee, and served on Jack Kilby Science Fair Committee.

Position of: Chemistry Professor, Eastern Oregon University

- Responsible for instruction of freshman chemistry laboratories; Chem 101 lab, 102 lab, 204 lab, 206 lab, and instructed physics lecture and laboratory; Sci 102 lect, 102 lab.

Position of: President / Director, R&D, Clemcoat Inc.

- Responsible for the creation of Clemcoat, Inc. entity. I managed a 5M/annual budget and supervised 12 employees. Oversaw the building of the pilot plant and R&D facility. Developed markets for placement of products. Was responsible for business financial activities. Invented and developed several families of novel cost effective thermoplastic powder coatings and specialty thermoplastic materials which resulted in secured intellectual property. Established the internal coating physical testing and characterization programs. Functioned as the primary technical support for end users of products. Was responsible for positive modifications to manufacturing equipment resulting in new and expanded product lines. I utilize design of experiment to improve product quality and reduce cost. Authored technical literature, MSDS sheets, and product literature.

## PATENTS

- Clemens, P.L., et al., "Elastomeric Coating for Corrosion Control and Chemical Containment," United States Patent Application 20,070,249,778, October, 2007.
- Clemens, P.L., et al., "Coating system for a porous substrate using an asphalt-containing thermosetting basecoat composition and a thermoplastic top coat composition," United States Patent 6,849,338, February, 2005.
- Clemens, P.L., et al., "Method of Coating a Substrate Using a Thermosetting Basecoat Composition and a Thermoplastic Top Coat Composition," United States Patent 6,544,596, April, 2003.

## PROPOSALS

- Clemens, P.L., Carra, C., "Implementation and Supply of Laboratory Coats in the Undergraduate Classroom," HCC Foundation, September 2017.
- Clemens, P.L., "Implementation of Open Educational Resources in the Chemistry Program," HCC/OpenStax, May 2016.
- Clemens, P.L., Bray, A.V., Muskopf, B.A., "Advanced Munitions Packaging Materials and Manufacturing Technology," SBIR Phase II Proposal, May 1998.
- Clemens, P.L., "Corrosion Avoidance Materials," SBIR Phase I Proposal, January 1998.
- Bray, A.V., Bulluck, J.W., Clemens, P.L., "Abrasion Resistant Low Friction Elastomeric Boot Materials for High Power Active Projectors," SBIR Phase I Proposal, July 1997.

## PUBLICATIONS

- Clemens, P., Wei, X., Wilson, B.L., Thomas, R.L., "Anatase titanium dioxide coated single wall carbon nanotubes manufactured by sonochemical-hydrothermal technique," Open Journal of Composite Materials, March, 2013, 3:21-32.
- Clemens, P.L., *Demonstration of Photovoltaic Properties of Titanium Dioxide Coated Single Wall Carbon Nanotubes Manufactured by Novel Sonochemical Technique*. Doctoral Dissertation, Texas Southern University, March, 2013.
- Clemens, P.L., *Fundamentals of Chemistry – Virtual Chemistry Experiments*. March 2004.
- Clemens, P.L., *College Chemistry I – Virtual Chemistry Experiments*. March 2004.
- Clemens, P.L., *College Chemistry II – Virtual Chemistry Experiments*. March 2004.
- Clemens, P.L., Bray, A.V., Muskopf, B.A., "Advanced Munitions Packaging Materials and Manufacturing Technology," SBIR Phase I Final Report, May 1998.
- Bray, A.V., Thornton, C.P., Clemens, P.L., "Test Methods In Outboard Cable Materials Selection," MTS Cable & Connector Workshop, March 30/31 1998.
- Koo, J.H., Clemens, P.L., "Evaluation of Fire Safe Polymers/Composites for Marine Applications," 43rd SAMPE Symposium, Anaheim, CA, May 31 – June 4, 1998.
- Clemens, P.L., Bray, A.V., Muskopf, B.A., "Develop a General Structural Composite Material to Meet MIL-STD-2031," SBIR Phase I Final Report, October 1997.
- Clemens, P.L., *A Modified Procedure for the Oxygen Isotopic Analysis of Water and Brines*. Masters Thesis, Arizona State University, 1996.
- Knauth, L.P., Clemens, P.L., "Climatic Temperature History of the Earth Based on Isotopic Analysis of Cherts," *Abstracts from GSA Symposium, 1995*.

## PRESENTATIONS

- Phuong Dang, Elena Evans, Andrew Nguyen, Gerardo Benito, Syeda Rasheed, Helen Michael, Crystal Young, Vishakha Shembekar, Paul Clemens "Poly(1,4-phenylene vinylene) (PPV) Derivatives and There Solubility Effects in Organic Light-emitting Diode (OLED) Devices," STEM Symposium, University of Saint Thomas, September 2016
- Charlie Thai, Binh Dang, Goodluck Ijezie-Desbois, Angel Rivera, Crystal A Young, Paul Clemens, Heath Giesbrecht "The Future of Polymer Derivatives for Use in OLEDs," STEM Symposium, Houston Community College, October, 2015.
- Charlie Thai, Binh Dang, Goodluck Ijezie-Desbois, Angel Rivera, Crystal A Young, Paul Clemens, Heath Giesbrecht "The Future of Polymer Derivatives for Use in OLEDs," STEM Symposium, University of Saint Thomas, September, 2015.
- Young, C., Clemens, P., Giesbrecht, H., Dang, B., Ijezie-Desbois, J., "The Future of Polymer Derivatives for Use in OLEDs," STEM Symposium, Houston Community College, April, 2015.
- Clemens, P.L., & Boarders, C., "Assessing Residential & Commercial Carbon Footprints," United Nations World Water Day, Houston Community College, March, 2015.
- A. Cherif, P. Clemens, F. Berechet, M. Chowdhury, S. Fahandezh Saadi, S. Acebo, A., Ahmed, T. Covey, "Isolation, Structure Elucidation and Evaluation of Antitumor Activity of Vinca Rosea Alkaloids," STEM Symposium, Houston Community College, April, 2013.
- Clemens, P.L., "Advancements in Field Applied Thermoplastic Powder Coatings," PACE Symposium, January, 2005.

## ANALYTICAL INSTRUMENTS / TECHNIQUES

- Differential Scanning Calorimeter
- Thermogravimetric Analyzer
- Thermomechanical Analyzer
- Dynamic Mechanical Analyzer
- UV-Vis Spectrometer
- Physical Materials Tester
- X-ray Diffraction
- Plasma Mass Spectrometer
- Ion Mass Spectrometer
- Gas Chromatography
- Fourier Transform Infrared Spectrometer
- High Performance Liquid Chromatography
- Nuclear Magnetic Resonance Spectroscopy
- Atomic Absorption
- Raman Spectrometer

## CERTIFICATIONS AND ASSOCIATIONS

- Vice-President, Vasudha Foundation's USA division 2020-present
- Boy Scouts of America Cubmaster and Den Leader, Troop 820 2019-present
- Education Chair of Houston Society of Coatings Technology 2009-present
- Past President of Houston Society of Coatings Technology 2007-2009
- DoD 5220.22-M Defense Investigative Service Security Clearance
- On-line teaching Certification, Houston Community College
- On-line teaching Certification, College of the Mainland
- Arizona State Community College Instructor Certification