

LAWRENCE D. (LARRY) SULLIVAN

Adjunct Professor at The Citadel

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Larry is a world class leader, geography professor, and biomass expert with extensive international operations and business development management experience in the petroleum processing and biofuel industries. Proven strategic ability to work cross culturally and cross functionally to profitably grow businesses in multi-cultural, global environments. Successfully builds and leads world-class teams for international life science, biotechnology and specialty chemical companies. Excellent record of success leading start-ups, turnarounds and rapidly growing companies. Adjunct Faculty at Trident Technical College and The Citadel. Served as an officer of a public traded company 2007 to 2009 (KRBF) Kreido Biofuels, Inc. Active Member of the American Institute of Chemical Engineers (AIChE), Society of Petroleum Engineers (SPE) and ASTM International Petroleum (D02) Standards Committee. Expert Witness in biotechnology cases. Member of the South Carolina Consumer Affairs Commission.

- Strategic planning and Due Diligence
- Capital asset oversight and Modeling
- Leading deal maker for Investment Firms
- Commercialization and Chemical Engineering
- Cross-cultural leadership
- Purchasing and sales negotiation
- Business development
- Cost analysis, reduction and control

PROFESSIONAL EXPERIENCE

The Citadel and Trident Technical College, Charleston, SC

2013 - PRESENT

Adjunct Faculty (Trident) and Adjunct Professor of World Regional and Economic Geography with a focus on the Oil and Gas Industry for military cadets and graduate students. Member of the US EPA Science Advisory Board and US DOE / USDA Biomass Technical Advisory Committee.

LAWRENCE D. SULLIVAN & COMPANY, INC., Summerville, SC

1998 - PRESENT

Biofuels, Biomass and Bioenergy Engineering Consultant to Oil, Gas, Biofuel and Financial Institutions

Provide expert engineering, financial analysis and program development in petroleum refining industry on consultative basis. Clients include Shell Oil, Conoco, Turner, Mason & Company (TMC), MWV, Gerson Lehrman Group and various private equity investors in oil & gas, biofuels, biomass and biotechnology. Advised leading engineering and project developers on biotechnology as expert witness on biomass conversions to energy, products and fuels.

- Completed due diligence for oil refiner acquisition of stranded ethanol plant assets.
- Advised GLG clients in 300+ engagements since 2004 in petroleum refining, biofuels, biomass and renewable energy and presented at more than 25 conferences.
- Saved Celanese Corporation \$15M on biofuel project reporting issue in 2008 and 2009.

ARBORGEN, INC., Ridgeville, SC

2011 - 2012

Biomass Business Development Lead

Developed commercial and technical bridges with leading power and petroleum companies for biomass supply. Team leader and advisor to new CEO on bioenergy markets. Worked with leading cellulose to sugar technology companies to supply genetically engineered Eucalyptus raw materials for trials.

- Presented 5 speeches in 1 year on novel tree technologies for maximum yield in short rotation with genetically engineered (GE) tree technologies.
- Negotiated 4 LOI agreements for supply of seedlings with energy, power and pellet producers.

OREAMNOS BIOFUELS, LLC, Williamsburg, VA

2007 - 2010

Entrepreneurial Project Developer

Led start-up LLC company to develop renewable fuel plant in Louisiana with ADITYA Birla Chemicals. Developed full project up to stage of seed capital formation.

PETROALGAE, LLC, Melbourne, FL

2009 - 2010

Sales Engineering Manager

Negotiated only PetroAlgae license agreement with Suriname national oil company Staastolie. Developed markets in Sri Lanka with power and biofuels companies. Developed process engineering models for solvent extraction of lipids from algae.

KREIDO BIOFUELS, INC., Public Traded KRBF, Camarillo, CA

2007 - 2009

CTO - Chief Technology Officer

Spearheaded leadership of public biofuel technology company, building biodiesel facilities with responsibility to develop engineering design, liaison with financial institutions and secure long-term strategic and technology-based advantages in biofuels markets worldwide. Key officer of public company for financial presentations with a role to commercialize new technology and gain widespread market acceptance by licensing technology. Managed CRADA with US EPA for new chemical process technology.

DELTA-T CORPORATION, INC., Williamsburg, VA

2005 - 2007

Biofuels Manager

Led Biodiesel Team to develop strategy and position DTC as market leader. Provided feasibility documentation to DTC clients on biodiesel and renewable diesel projects. Assisted financial institutions with due diligence on biodiesel investments. Assisted with engineering designs for biodiesel plants. Designed new biodiesel systems. Advised financial firms on ethanol investment

- Presented R&D papers to management for technology selection.
- Secured hedge fund due diligence revenue for 11 engagements with revenue of \$4 million.

CROWN IRON WORKS COMPANY, St. Paul, MN

2002 - 2004

Product Manager

Led Crown's biodiesel initiative to position company as the leader in the growing biodiesel process technology market. Negotiated contracts for construction of 2 plants and developed international ventures with petroleum firms in South America. Managed Biodiesel team and business unit with 30% GM and sales of \$32M. Managed sales effort to secure company position in new market with new product.

- Spoke at World Fuels Conference, positioning company with leading oil and gas companies.
- Positioned company with biotechnology venture capitalists by presenting at Biotechnica America.
- Authored paper with engineering staff for presentation at Malaysian Palm Oil Conference.
- Presented biodiesel technology to Petrobras, resulting in construction of 2 plants with profit of \$9M.

GE OSMONICS, Minneapolis, MN**1998 - 2002**

Product Manager

Provided leadership and merger skills to design new product lines in biopharmaceuticals and oil and gas operations. Preserved gross margin and increased sales from merged units. Led MSI merger team.

- Created 1 line of products from merger of 2 companies with gross margin of 55% and P&L for \$21M. Achieved profit targets for product line for 2 years.
- Wrote strategic plan for filtration products for General Manager and CEO / President.
- Advised on oil and gas markets. Developed sales in Brazil and UK markets.
- Awarded Business Excellence Citation 1999 and 2000.

EDUCATION

Internship, Texas Department of Water Resources, Austin, Texas, 1978 to 1980

PhD Courses in Regional Planning, College of Geosciences, Texas A&M University, College Station, Texas, 1977 to 1978

MA, Geography, School of Geographical Sciences Arizona State University at Tempe, Arizona, 1977

BA, Geography, University of Texas at Austin, Texas, 1973

PROFESSIONAL DEVELOPMENT

MBA Executive Program, Warwick University, England, 1992 to 1993

Refinery and Petrochemical Engineering, St. Catherine's College, Oxford University, College of Petroleum Studies, now The Oxford Princeton Programme, 1987 and 1991

Corporate Strategic Planning, London School of Economics, London, 1985 to 1987

PUBLICATIONS AND PRESENTATIONS Selected Invited Presentations and Speeches

In 2018, Mr. Sullivan published in BIOfpr, March 2018, the Guest Editorial titled: *A Sound and Rational View of Biofuels in North America*

<http://www.biofpr.com/view/0/journal.html>

2017

- 5th Oleochemicals Conference, KL, Malaysia, “**Oleochemicals and Biofuels: Asia and North American Markets**” for ICIS International. Presentation by Lawrence D. Sullivan, Trident Technical College, Charleston, SC and Lawrence D. Sullivan & Company, Inc. Adjunct Professor at The Citadel, Charleston, South Carolina, USA at the Westin Hotel, Kuala Lumpur, Malaysia, January 11, 2017
- Invited to speak at 14th Oleochemicals (Enmore Conferences) in Nanjing, China (July 2017) and Industrial BIO in Montreal, Canada (July 2017) on US biodiesel markets, technologies and government programs.

2016

- International Biomass Conference and Expo, Charlotte, NC “**Biomass Supply Chain Valuations: Feedstock to Conversions to End Use – Financial and Economic Transparency**” April 22, 2016 a Presentation by Lawrence D. Sullivan, Trident Technical College, Charleston, SC and Lawrence D. Sullivan & Company, Inc. Adjunct Professor at The Citadel, Charleston, South Carolina, USA
- 2016 TAPPI PEERS IBBC Conference, Jacksonville, Florida, USA “**Biomass Supply Chain Valuations: Feedstock to Conversions to End Use – Financial and Economic Transparency**” by Larry Sullivan, Project Management Consultant, Adjunct Professor, The Citadel, Charleston, South Carolina and Economic Geography Instructor at Trident Technical College. Lawrence D. Sullivan & Company, Inc. with Carla M. Wood, Ph.D.

2015

- World Bio-Summit & Expo, Dubai, UAE, “**Biomass Expected Returns: The Capital Asset Pricing Model**” Keynote Presentation by Invitation, OMICS, November 2-4, 2015