

JEFFREY C. TREWELLA, Ph.D.

ENTREPRENEURIAL EXECUTIVE – ENGAGEMENT PARTNER RESEARCH DIRECTOR – VENTURE LEADER

PROFILE

Results-driven entrepreneurial executive with proven ability to create, evaluate, develop, and commercialize multiple technology ventures, generating over \$300 million in profits. Strong functional background in research and product innovation. Broad technical experience in catalysis, process development, chemicals, fuels, lubricants, additives, alternative fuels & lubricants, composition, and mathematical modeling. Strengths include: leadership, drive, vision, strategy, out of the box thinking, innovation, alliance partner cultivation & relations, persuasive communications, sales, P&L.

EXPERIENCE

Innovative Solution\$ Inc.

FOUNDER, PRESIDENT

2000-Present

Solve problems in the energy, manufacturing, and service sectors. Drive technology ventures. Advise executives in intellectual property driven companies on new ventures. Develop growth strategies. Work with PetroTech Consultants. Mentor and train next generation professionals.

- Leading 37-member ASTM task force to create a new, renewable jet fuel specification.
- Authored EPA gasoline and diesel fuel Part 79 applications leading to regulatory approvals.
- Raised >\$4 MM in DOE grants by creating *commercialization plans* for 2 Phase-II and 1 Phase-III SBIR grant applications.
- Developed commercial pricing models and optimizers for 3 renewable fuels and 3 customers.
- Identified and developed alternatives to improve refinery waste stream economics 41-fold.
- Analyzed and issued report outlining information needed to build a renewable fuels refinery.
- Innovated separations strategy to extend expected catalyst life >100-fold.
- Prepared 16 patent disclosures including 4 composition of matters for a renewable fuels client.
- Identified 3 potential specialty products for a commodity product engagement partner. Crafted and led R&D program to prove out venture potential.
- Analyzed and issued report outlining market acceptance hurdles for 4 separate products. Developed detailed technical and business paths forward.
- Represented client to Navy, Air Force, Army, ASTM, Coordinating Research Council, and Commercial Airlines Alternative Fuels Initiative.
- Identified and vetted 24 potential strategic partners to expand capabilities or to reduce expenditures. Conducted due diligence leading to 7 contracts.
- Illuminated the limited merits of producing lubricant basestocks from a gas oil stream.
- Recommended a bio-fuels start-up alter their analysis program to avoid previously misinterpreted results.
- Recommended LIMS enhancements to enable sample tracking, insure regulatory compliance, and decrease analytical turn around time.
- Crafted forensic program and diagnosed the root cause of a diesel fuel injector plugging problem. Proposed actions that solved the problem and allowed refinery client to resume fuel shipments to their higher margin customers.
- Evaluated 6+ technologies for producing feedstocks for a jet fuel manufacturing process for a Fortune-100 client.
- Evaluated patent landscape and acquisition candidate for a medical device client.
- Evaluated and recommend that a client not license a perceived platform patent or launch corresponding venture.
- Organized & led programs coaching over 100 CEOs & executives on raising venture capital.

Tanglewood Capital Partners™**FOUNDER, MANAGING PARTNER****2003-2009**

Conceive, develop, and provide advanced investment products to affluent investors.

- Founded Tanglewood Capital Partners & launched *Sequoia I, L.P.* investment fund.
- Launched *CT Dynamic, L.P.* private investment partnership.
- Raised \$8+ million in qualified and ordinary assets from 40 high net worth investors.
- Ran business; P/L, research, trading, risk management, accounting, sales, client service.
- Issued 48 educational newsletters to investors and prospects.

Brandywine Asset Management**DIRECTOR****2002-2003**

Conceive, develop, and introduce hedge fund style products into the retail market.

- Conducted quantitative research to support product development and positioning.
- Created and launched *1777 Capital* brand and individually managed accounts.
- Developed patent-pending fee structure for *New Epoch Portfolio* mutual fund.
- Identified and quantified 8 investment myths leading to a recently published book.

PharmaLeads, Inc.**CHIEF SCIENTIFIC OFFICER****2000-2001**

Create and protect technology assets. Build, lead, and communicate PharmaLeads' technology program. Attract, recruit, reward, and retain R&D scientists. Establish and maintain an atmosphere of innovation, excitement, contribution, quality, and technical excellence.

- Created separations and characterization strategies.
- Forged alliance with market leader to accelerate separations and reduce cost of goods.
- Expanded scope and enforceability of core patent.
- Increased pre-money valuation 400+% by negotiating letter of intent with a major corporation.

Mobil Corporation**PROGRAM LEADER, REFINING, MOBIL TECHNOLOGY CORP.****1997-2000**

Lead Mobil's worldwide strategic research program in refining. Integrate with all other strategic and development groups to plan, execute, and deliver technologies to meet refinery needs.

- Identified, created, and forged 4 ventures with universities and companies.
- Innovated 3 new process concepts and 2 new product lines.

TECHNOLOGY LEADER, LUBES AND SPECIAL PRODUCTS, MOBIL R&D**1995-1997**

Develop program and lead team to conduct strategic research on lubricant base stocks and specialty products. Develop program to leverage research dollars. Create and patent new technologies.

- Leveraged research by 56% by initiating programs with 2 universities and 3 companies.
- Created potential \$50+ million product by conceiving & patenting new, high-performance lube.

PROJECT LEADER, HYDROPROCESSING AND CHEMICALS, MOBIL R&D**1992-1995**

Lead Hydroprocessing and Chemicals research group to innovate, patent, and progress new technologies to development. Develop a new quality-mindset to improve R&D efficiency.

- Saved \$30+ million by conceiving and deploying clean diesel fuel manufacturing in CA.
- Increased lab productivity 13.5% (\$30+ million/yr) by pioneering a quality culture.

SENIOR PLANNING ASSOCIATE, MOBIL CHEMICAL COMPANY 1989-1992

Support executive decisions by conducting strategic, technical, and economic analyses of all new ventures and projects for \$40 million specialty chemical division. Solicit and secure capital funding.

- Solicited and obtained \$50+ million corporate funding for 10 capital projects.
- Provided division leadership and focus by preparing annual 40-page investment strategy.

PROJECT LEADER, NEW MATERIALS EVALUATION, MOBIL R&D CORP. 1988-1989

Establish and lead group to evaluate new materials' potential. Develop more efficient protocols.

- Generated \$90+ million by identifying and championing clean gasoline catalyst technology.

SUPERVISING CHEMIST, GASOLINE ADDITIVES, MOBIL R&D CORP. 1984-1988

Turn around Gasoline Additives group. Conceive, develop, and launch gasoline products.

- Increased income by \$60+ million and recaptured "detergent gasoline" market franchise by inventing and launching clean fuel injector gasolines worldwide.

RESEARCH CHEMIST, COMPOSITION RESEARCH, MOBIL R&D CORP. 1979-1984

Solve manufacturing and product performance problems by pioneering analytical techniques.

- Increased department efficiency 13.4% by creating 4 high-throughput analytical methods.

EDUCATION

Ph.D. in Chemistry, Pennsylvania State University, Phi Kappa Phi Research Award

B.S. in Biology, Chemistry, Lock Haven University, SUMMA CUM LAUDE, Dean's List (4 yrs.)

OTHER SKILLS and SERVICE

- 22 Patents, 12 publications
- Past Chairman, Southern Jersey Section, American Chemical Society
- Technology assessment Selection Committees
 - Early Stage East venture fair
 - Bio Life Tech venture fair
- Member founding Board of Directors: Bio Life Tech Venture Fair
- Coaching Chairman, Early Stage East and Bio Life Tech Venture Fairs
- NASD Series 7 license (expired)
- ASTM member and HDCJ (alternative jet fuel) task force chairman
- Coordinating Research Council
- Commercial Airlines Alternative Fuels Initiative
- International Association for the Stability and Handling of Fuels
- Association of Asphalt Paving Technologists
- Southeast Asphalt Users Producers Group
- Eagle Scout

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Patents

Recovery of Aromatic Hydrocarbons Using Lubricating Oil Conditioned Membranes, US 6,187,987, 2/13/01.

Synthesis of Branched Polyethylene Fluids for Use in Lubricant Compositions, US 6,150,576, 3/19/99.

Isoparaffinic Lube Basestock Compositions, US 6,090,989, 10/15/98.

Synthesis of Branched Polyethylene Fluids for Use in Lubricant Compositions, US 6,063,973, 3/19/99.

Hydrocarbon Upgrading Process, US 5,865,988, 5/12/98.

Benzene Conversion in an Improved Gasoline Upgrading Process, US 5,865,987, 5/12/98.

Process for the Production of Diisopropyl Ether and Isopropanol Employing a Solvent, US 5,808,161, 12/4/95.

Vapor Pocket Reactor, US 5,714,640, 1/21/94.

Process and MCM Zeolite Catalysts for the Alkylation of Alkenes with Isoalkanes in the Production of Gasoline and Diesel Fuel Octane Boosters, US 5,639,931, 6/2/95.

Process for Producing Low Aromatic Diesel Fuel with High Cetane Index, US 5,639,931, 5/15/96.

Alkylation Process for the Desulfurization of Gasoline, US 5,599,441, 5/31/95.

Multistage Indirect Propylene Hydration Process for the Production of Diisopropyl Ether and Isopropanol, US 5,569,789, 8/2/95.

Distillate Upgrading Process, US 5,520,799, 9/20/95.

Gas Phase Process for the Hydration of Propylene, US 5,488,186, 3/22/95.

Hydrogen Fluoride Catalyst Composition, WO 9,516,740, 7/20/94.

Multizone Catalytic Process for Synthesis of Unsymmetrical Ethers Such as MTBE, US 5,414,146, 8/23/93.

Process for the Production of Ethers, WO 9,426,685, 4/29/94.

Deposit Control Additives and Fuel Compositions Containing Them, WO 9,202,601, 8/8/91.

Diisocyanate Derivatives as Ashless Dispersants and Detergents and Lubricant Compositions Containing Them, US 5,053,153, 2/8/89.

Polyalkylene Succinimide Deposit Control Additives and Fuel Compositions Containing Them, US 5,114,435, 2/20/90.

Mannich Base Deposit Control Additives and Fuel Compositions Containing Them, EP 1989-313173, 12/15/89.

Diisocyanate Derivatives as Ashless Dispersants and Detergents and Fuel Compositions Containing Them, US 4,897,087, 11/30/88.

Publications

Renewable Fuel Coproducts -- Potential Uses in Asphalt, Journal of the Association of Asphalt Paving Technologists, vol 81, (2012), pp 25-50.

Properties of Gasoline and Diesel Fuels Containing Renewable Drop-In Biofuel Blendstocks Prepared by the Thermo-catalytic Conversion of Lignocellulose, International Association for Stability, Handling, and Use of Liquid Fuels, Sarasota, September 2010.

Benzene Reduction Using OCTGAIN™ - A New Way to Meet RFG Specifications, Am. Chem. Soc., Div. Fuel Chem. (1996), 41(3), 911-915.

Catalytic Hydrocracking Reaction Pathways, Kinetics, and Mechanisms of n-Alkylbenzenes, Energy Fuels, (1994), 8(6), 1394-400.

Port Fuel Injector Cleanliness Studies, SAE Technical Paper 861535, 1986.

The Silicon-29 MAS NMR Spectrum of ZSM-12, Zeolites, (1985), 5(3), 130-1.

Observation of the Electron-Coupled Nuclear Spin-Spin Interactions in the Silicon-29 MAS NMR Spectrum of Low Albite, J. Magn. Res. (1984), 59(2), 352-6.

High Resolution Silicon-29 NMR Spectroscopy of ZSM-39, Zeolites, (1984), 4(2), 112-13.

Determination of Molecular Structure by Studies of Spin-Lattice Relaxation, (Ph.D. Thesis), University Microfilms Int, Order No. 8010105, (1979), 168 pp.

Studies in Nuclear Magnetic Resonance Spectroscopy. 17. Deuterium Quadrupole Coupling Constants in Intramolecularly Hydrogen Bonded Systems, J. Am. Chem. Soc. (1980), 102(8), 2519-25.

The Carbon-13 NMR Spectrum of Aporphine Alkaloids, J. Nat. Prod. (1979), 42(5), 437-49.

Studies in Nuclear Magnetic Resonance Spectroscopy. 16. Nonsymmetry of the Hydrogen Bond in 1-Phenylamino-7-phenylimino-1,3,5-cycloheptatriene, J. Am. Chem. Soc. (1979), 101(21), 6428-9.

The Use of Carbon-13 Spin Lattice Relaxation Times for Determining the Position of the Proton in a Intramolecular Hydrogen Bond, J. Am. Chem. Soc. (1976), 98(18), 5712-14.