Appendix IV – Sample Start-Up Companies in the Chemical (and Allied) Industries

Examples of start-ups innovating in the chemical space.

1. Accelrys (http://accelrys.com/)
   - Industry: Software and Sales
   - Business Model: Platform
   - Size: Medium
   - Stage: Public
   - Innovation: Founded in 2001 leveraging a 20+ year heritage; established Scientific Business Intelligence market sector.
   - Status: Merged with Symyx in 2010 to form the leading scientific informatics software and services company.
2. Allozyne (http://www.allozyne.com)
   - Industry: Biotechnology
   - Business Model: Products and Platform
   - Size: Small
   - Stage: VC funding
   - Innovation: Founded in 2005, developed biociphering platform, which allows customization of protein therapies.
   - Status: Currently therapeutic product for multiple sclerosis in Phase I Clinical Trial.
3. Amryis Biotechnologies (http://www.amyrisbiotech.com/)
   - Industry: Energy
   - Business Model: Platform
   - Size: Public
   - Stage: Venture Funding
   - Innovation: Founded in 2003, developed renewable fuel using synthetic biology to alter plant-based feedstock. Additionally, platform was used to produce malaria treatment.
   - Status: Currently have pilot plants in U.S. and Brazil and numerous partnerships with large corporations. Employs over 200 people and have raised $244 million since 2006, going public in Sept. 2010.
4. Arsenal Medical (http://www.arsenalmedical.com)
   - Industry: Life Science
   - Business Model: Research
   - Size: Small
   - Stage: Venture Funding
   - Innovation: Founded in 2005, previously WMR BioMedical, develops therapeutic products based on their BioActive Composite platform including ElastaCore (high strength and elastic composite biomaterial) and AxioCore (controlled release delivery of therapeutic molecules).
   - Status: Currently employs over 30 people and have raised $8.2 million of $12.2 million in Series C funding as of May 2009.
5. AuraSense (http://www.aurasense.com/)
   - Industry: Life Science
   - Business Model: Partnerships in the research reagents/tools and therapeutics space
   - Size: Small
   - Stage: Angel

- Innovation: Founded in 2009, developed synthetic forms of HDL and intracellular gene regulation and detection platforms based upon gold nanoparticle technology.
- Status: Raised $2.5 million in initial funding on December 2009. Established partnerships with three pharma companies and two research tools and reagents companies.

6. Auterra (http://auterrainc.com/)
   - Industry: Chemicals and Materials
   - Business Model: Platform
   - Size: Small
   - Stage: Venture/Corporate Funding
   - Innovation: Founded in 2003, formerly as Applied NanoWorks, develops advanced materials for manufacturing and development including nano-oxides and nano-phosphors. Enables producers and refiners to improve the quality of their oil and oil products by removing pollutants.
   - Status: Auterra eventually developed and patented a unique platform for creating inorganic-organic molecules in 2007. Raised >$10M in funding.
7. Bloom Energy (http://www.bloomenergy.com/)
   - Industry: Energy
   - Business Model: Product
   - Size: Medium
   - Stage: Venture Funding
   - Innovation: Founded in 2001, developed solid oxide fuel cell to provide on-site power generation systems.
   - Status: Raised over $400 million and employs over 500 people. Technology is currently in testing by numerous Fortune 500 companies.
8. Calando Pharmaceuticals (http://www.calandopharma.com/)
   - Industry: Biopharmaceutical
   - Business Model: Platform and Products
   - Size: Small
   - Stage: Corporate Funding
   - Innovation: Founded in 2000 and merged with Insert Therapeutics in 2008. Developing siRNA-containing therapeutics from cyclodextrin-containing polymer technology.
   - Status: Funded by Arrowhead Research Corporation, licensed technology to Cerulean Pharmaceuticals, and currently in Phase I clinical trials.
9. Calhoun Vision (http://www.calhounvision.com/)
   - Industry: Medical device and Materials
   - Business Model: Products
   - Size: Small
   - Stage: Angel funding
   - Innovation: Founded in 1999, developed light adjustable lens technology for intraocular lens.
   - Status: Product currently available in Europe and last noted to be near completion of Phase II Clinical Trials in 2009.

10. Cambrios (http://www.cambrios.com/)
    - Industry: Nanotechnology
    - Business Model: Research
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2002, previously known as Semzyme, developed ClearOhm, a coating material that produces transparent, conductive film by wet processing for touch screens and LCDs.
    - Status: Raised $14.5 million in Series D funding on November 2009. Have an alliance with Sumitomo and Chisso Corp to commercialize product (2009) and awarded U.S. DoD contract (April 2010).
11. Chembridge (http://www.chembridge.com/)
    - Industry: Software
    - Business Model: Platform
    - Size: Medium
    - Stage: Private
    - Innovation: Founded in 1993, developed software and screen libraries of compounds to biotech, pharmaceutical, and academic organizations.
    - Status: Currently have over 350 employees and partnerships with pharmaceutical companies including Pfizer and AstraZeneca. Was cited as top lead likeness and diverse compound screening libraries in 2006.
12. Contour Energy Systems (http://www.contourenergy.com/)
    - Industry: Battery and related materials
    - Business Model: Products
    - Size: Small
    - Stage: VC funding
    - Innovation: Founded in 2007, develops new materials and battery systems for primary and secondary batteries.
    - Status: Established lab and prototype manufacturing facility in 2008, which was later expanded in 2010. Released first commercial products that utilize its proprietary Fluorinetic TM technology in the 4th quarter of 2010, targeting applications in the automotive, consumer, industrial, military, and medical fields. In addition, the company created a subsidiary in U.K. to market in European countries.
13. Cymetech (http://www.cymetech.com/)
    - Industry: Materials
    - Business Model: Products
    - Size: Small
    - Stage: Private/Corporate Funding
    - Innovation: Founded in 2000, developed ultra-high purity dicyclopentadiene.
    - Status: Polydicyclopentadiene business unit was acquired by Materia.
14. Eidogen-Sertanty (http://eidogen-sertanty.com/)
    - Industry: Software
    - Business Model: Platform
    - Size: Small
    - Stage: Post Venture Funding
    - Innovation: Sertanty founded in 2003, acquired Eidogen in 2005 with name change to Eidogen and Sertanty, and developed software that bridges knowledge

gap between chemistry and biology for new drug discovery. Worldwide (bio)pharmaceutical customer base. Offerings include content, software, and collaborative services focusing in disease areas including cancer, AIDS, arthritis, general infection, and pain.
- Status: Numerous partnerships, including Accelrys/Symyx and ChemAxon. Several multi-year collaborations including on with FDA's National Center for Toxicological Research.

15. Elevance Renewable Sciences (http://www.elevance.com/)
    - Industry: Specialty Chemicals
    - Business Model: Products and platform
    - Size: Small
    - Stage: Private Equity funded
    - Innovation: Founded in 2007, provides conversion of biomaterials into chemicals. Major emphasis on the conversion of seed oils into chemicals using Nobel prize winning metal catalysis.
    - Status: Recently announced formation of a joint venture with Wilmar International to build a world scale biochemical refinery in 2010 (start up 2H2011) and release of new both existing and novel products. Major marketing partnerships announced with Dow Corning Corporation and Stepan Company.
16. Fluidigm (http://www.fluidigm.com/)
    - Industry: Diagnostics
    - Business Model: Product and Platform
    - Size: Medium
    - Stage: Venture Funding
    - Innovation: Founded in 1999 as Mycometrix and renamed to Fluidigm in 2001. Developed integrated fluidic circuits for molecular diagnostics.
    - Status: Currently have multiple products available and earned $9.3 million in the first six months of 2009, in addition to releasing the first re-usable bio-chip in 2010.
17. Gelest (http://www.gelest.com/)
    - Industry: Chemicals and Materials
    - Business Model: Product
    - Size: Small
    - Stage: Venture/Corporate Funding
    - Innovation: Founded in 1990, supplies pharmaceutical intermediates, custom silica, silanes for chemical separation and diagnostic markets, and silicon-based materials for optics applications.
    - Status: Developed a well-known catalog of ~3,000 compounds intermediates.
18. GeneOhm Sciences (http://www.bd.com/geneohm/english/)
    - Industry: Diagnostics
    - Business Model: Product and Platform
    - Size: Small
    - Stage: Public
    - Innovation: Founded in 2001, developed rapid, nucleic acid-based systems that detect and identify infectious agents and genetic variations.
    - Status: Merged with Infectio Diagnostic in 2004 and acquired by Becton Dickinson in 2006 for $230 million.

19. GenMark Diagnostics (http://www.genmarkdx.com/)
    - Industry: Diagnostics
    - Business Model: Platform and Product
    - Size: Small
    - Stage: Public
    - Innovation: Founded in 1995 as Clinical Micro Sensors, sold to Motorola in 2000, and purchased by Osmetech in 2005. Developed multiplexed molecular test that is less prone to contamination and steps.
    - Status: Changed to GenMark Diagnostic and went public in 2010, currently have multiple products available.
20. Gevo (http://www.gevo.com/)
    - Industry: Biofuel and Chemicals
    - Business Model: Platform
    - Size: Small/Medium
    - Stage: Venture and Corporate Funding
    - Innovation: Founded in 2005, develops biobutanol through biotechnology and fermentation organisms.
    - Status: Filed for IPO in 2010 and recently acquired Agri-Energy's ethanol production facility with plans to begin commercial production in 2012.
21. GreatPoint Energy (http://www.greatpointenergy.com/)
    - Industry: Energy
    - Business Model: Platform
    - Size: Medium
    - Stage: Venture and Corporate Funding
    - Innovation: Founded in 2004, developed Bluegas, a highly efficient catalytic process, converting coal to natural gas.
    - Status: Raised $37 million since 2007 and $100 million in Series C funding in 2007 led by Citi and Dow Chemical. Currently have distribution agreements with Dow Chemical and Peabody Energy.
22. Helicos (http://www.helicosbio.com/)
    - Industry: Life sciences
    - Business Model: Platform and Products
    - Size: Medium
    - Stage: Public
    - Innovation: Founded in 2003, previously Newco LS6, developed a system that enables ultra-highthroughput genetic analysis by directly sequencing single molecules of nucleic acids.
    - Status: Currently have multiple products available and recently filed a patent infringement lawsuit against Pacific Biosciences in 2010.
23. Helixis (http://www.ecoqpcr.com/)
    - Industry: Diagnostics
    - Business Model: Product
    - Size: Large
    - Stage: Public
    - Innovation: Founded in 2007, developed a real-time polymerase chain reaction system, a compact device that can measure the number of times that a particular gene is expressed in a DNA sample.
    - Status: Acquired by Illumina in 2010 for $105 million in 2010.

24. ICx Technologies (http://www.icxt.com/)
    - Industry: Security Sensors/Systems
    - Business Model: Products
    - Size: Medium/Large
    - Stage: Public
    - Innovation: Founded in 2002, develops and manufactures novel sensors and integrated systems for homeland and military security.
    - Status: The company was formed through the venture firm Digital Power Capital from a roll-up of more than 15 small companies around a central company (Nomadics Inc.). These acquisitions have led to a broad synergistic product base including explosives detectors that are widely deployed by the US Military and in 70 US Airports. The company raised $76M with the IPO and has a net revenue around $200M. Acquired by FLIR Systems in Aug 2010 for $274 million.
25. Illumina (http://www.illumina.com/)
    - Industry: Life Science
    - Business Model: Platform
    - Size: Large
    - Stage: Public
    - Innovation: Founded in 1998, developed sequencing and microarray technology.
    - Status: Currently one of the leaders in sequencing and microarray industry. Went public in 2000 and has a current market cap of over $6 billion.
26. InMat (http://www.inmat.com/)
    - Industry: Chemicals and Materials
    - Business Model: Product
    - Size: Small
    - Stage: Venture/Corporate Funding
    - Innovation: Founded in 1999, with technology from Hoeschst Herberts and Michelin, provides ultrathin coating based on nanoclays.
    - Status: Extended application from tires to tennis and soccer balls; received SBIR Phase II funding and NJTC Venture Fund.
27. Integrated Diagnostics (http://www.integrated-diagnostics.com/)
    - Industry: Diagnostics
    - Business Model: Platform
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2009, uses genomic and proteomic techniques to identify and detect organ-specific blood proteins that appear at the earliest stage of disease.
    - Status: Raised $10 million in 2010 and $30 million in 2009 of Series A financing.
28. Kemeta (http://www.kemeta.com)
    - Industry: Chemicals, Diagnostic
    - Business Model: Platform and Product
    - Size: Small
    - Stage: Venture/Corporate Funding
    - Innovation: Founded in 2005, provides a portable over-the-counter device to monitor fat loss based on technology from Dow Chemical; measuring acetone, a bio-marker for fat metabolism.

- Status: Product currently in clinical trial with Obesity Treatment Center medical group.

29. Konarka Technologies (http://www.konarka.com/)
    - Industry: Chemicals and Materials
    - Business Model: Platform
    - Size: Medium
    - Stage: Venture/Corporate Funding
    - Innovation: Founded in 2001 as a large area manufacturer of organic solar cells.
    - Status: Developed early polymers that increased performance by harvesting a larger percentage of the solar spectrum. Raised $150M in VC and corporate funding and $20M in federal funding.
30. Kuros Biosurgery (http://www.kuros.ch/)
    - Industry: Biotechnology and Materials
    - Business Model: Platform and Products
    - Size: Medium
    - Stage: Venture and Corporate Funding
    - Innovation: Founded in 2002, designs and engineers biologics that are chemically linked into Kuros biomaterials and form an integral part of its product candidates.
    - Status: Collaboration and license agreement made with Baxter Healthcare in 2005 and currently have multiple candidates through Phase II clinical trials.
31. Lehigh Technologies (http://www.lehightechnologies.com/)
    - Industry: Green Materials
    - Business Model: Product
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2003, developed technology to produce ultra-fine rubber powder made from end of life tires.
    - Status: Raised $34.5 million in 2008 led by KPCB and $18 million previously. Georgia plant is capable of producing >100 million pounds of rubber powder. Lehigh's sustainable, micronized rubber powders can be used in a wide range of industrial and consumer applications, including rubber, coatings, asphalt, and plastics.
32. LeukoDx (http://www.leukodx.com/)
    - Industry: Medical Device and Diagnostics
    - Business Model: Product
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2009, developing portable fluorocytometry instruments based on microfluidics technology with single-use cartridges.
    - Status: Raise $155,000 in 2010 and $377,000 in 2009.
33. Liquidia Technologies (http://www.liquidia.com/)
    - Industry: Life Science
    - Business Model: Platform
    - Size: Small
    - Stage: Private
    - Innovation: Founded in 2004, developed technology to design highly precise particle-based (size, shape, composition) vaccines and therapies.

- Status: Raised $20 million Series C funding in 2010. Seasonal flu candidate is currently in Phase I clinical trials.

34. Maxygen (http://www.maxygen.com/)
    - Industry: Biotechnology
    - Business Model: Platform and Products
    - Size: Medium
    - Stage: Public
    - Innovation: Founded in 1997, developed molecular breeding platform for rapid identification of lead product candidates and protein modification technology.
    - Status: Completed Phase IIa clinical study of a protein for breast cancer in 2009.
35. Materia (http://www.materia-inc.com/)
    - Industry: Chemicals
    - Business Model: Platform and Products
    - Size: Small
    - Stage: Venture, Angel funding
    - Innovation: Founded in 1997, develops catalyst technology for use in chemical, pharmaceutical and materials manufacturing.
    - Status: The company has licensed its metathesis technology for manufacturing to Bayer Material Sciences AG in 2004, later spun off as Lanxess and formed a partnership with Cargill in 2003, later incorporated as Elevance Renewable Sciences in 2008.
36. Molecular Imprints (http://www.molecularimprints.com/)
    - Industry: Chemicals and Materials
    - Business Model: Platform
    - Size: Small
    - Stage: Private
    - Innovation: Founded in 2001, developed jet and flash nanoimprinting and nanopatterning manufacturing technology.
    - Status: Hold over 100 patents and raised over $100 million in funding with multiple machines on the market.
37. Myriant Technologies (http://www.myriant.com/)
    - Industry: Chemicals and Materials
    - Business Model: Product
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2004, developed biocatalyst technology to convert renewable feedstock into high value bio-based chemicals.
    - Status: Began commercial production of D(-) lactic acid in 2008. Employs 75 people, raised $5 million in February 2010, and awarded $50 million grant from U.S. DOE for succinic acid production.
38. Nano-C (http://www.nano-c.com/)
    - Industry: Chemicals and Materials
    - Business Model: Platform
    - Size: Small
    - Stage: Private
    - Innovation: Founded in 2001, developed low-cost and continuous manufacturing methods for single walled carbon nanotubes and specialty fullerenes.

- Status: Produces low-cost, high-quality fullerenes, single-walled carbon nanotubes and their chemical derivatives. Developed a number of unique chemistries that enable the world's best organic photovoltaics and chemistries for other energy and electronic devices.

39. NanoInk (http://www.nanoink.net/)
    - Industry: Life Science
    - Business Model: Service and Product
    - Size: Small
    - Stage: Venture Capital
    - Innovation: Founded in 2002, developed Dip Pen Nanolithography (DPN), a nanofabrication technology that rapidly and easily create nanoscale structures from a wide variety of materials.
    - Status: Raised $65 million in October 2010 and had 70 employees in 2009. Recently announced a distribution partnership in Brazil. Has multiple product lines for brand protection and high resolution lithography, including the Nscriptot, which is sold world-wide.
40. Nanosphere (http://www.nanosphere.us/)
    - Industry: Medical Diagnostics
    - Business Model: Product
    - Size: Medium
    - Stage: Public
    - Innovation: Founded in 2000, developed gold nanoparticle and chemistry technology that functionalize with nucleic acids or antibodies to detect molecules of interest.
    - Status: Launched the FDA-cleared Verigene System for medical diagnostics and has agreements with Eli Lilly to employ pharmacogenetic assays in drug development.
41. Nano Terra (http://www.nanoterra.com/)
    - Industry: Nanotechnology
    - Business Model: Research
    - Size: Small
    - Stage: Private
    - Innovation: Founded in 2005, developed technology platform including soft lithography, self-assembly, surface chemistry, and fluidics that can assemble and directly control structures and chemistries at all length scales.
    - Status: Employs 15 people (2007) and have agreements with several large corporations (3M, Merck, and Bayer).
42. Next Dimension Technologies (http://www.nextdimensiontech.com)
    - Industry: Materials
    - Business Model: Product
    - Size: Small
    - Stage: ----
    - Innovation: Founded in 2004, develops cost-efficient detection solutions for chemical sensing applications using novel sensor and sensor array systems.
    - Status: Currently developing products in several application areas, including hazardous gas detection systems for the security and defense industries.
43. Nine Sigma (http://www.ninesigma.com)
    - Industry: Open Innovation

- Business Model: Full service innovation solutions company
- Size: Small
- Stage: Venture/Corporate Funding
- Innovation: Founded in 2000, provides a full range of open innovation services including program design for open innovation implementations, solution searches, business and technology intelligence. Acts as innovation intermediary for solution seekers looking for new sources of knowledge, capabilities and solutions.
- Status: Has developed a diverse client base including Global 1000 companies in automotive, chemical, consumer packaged goods, energy, electronics, food and beverage and bio/pharma industries. Extended product offerings to include advisory and training services.

44. OMNOVA Solutions (http://www.omnova.com/)
    - Industry: Chemicals and Materials
    - Business Model: Product
    - Size: Large
    - Stage: Public
    - Innovation: Founded in 1999, developed new synthetic latex and other emulsion polymers and specialty chemicals.
    - Status: Recently acquired Dow Chemical's hollow sphere plastic pigment product line and Eliokem International, specialty chemicals manufacturer for $300 million.
45. OPX Biotechnologies (http://www.opxbiotechnologies.com/)
    - Industry: Chemicals and Fuels
    - Business Model: Product
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2007, developed the Efficiency Directed Genome Engineering (EDGE™) technology which allows rapid, rational, and robust optimization of microbes and bioprocesses for biochemicals and biofuels.
    - Status: Started with $1 million of seed funding and currently employs 48 people. Raised over $22.4 million and has successfully developed the microbe and bioprocess at pilot scale for its first product - BioAcrylic. BioAcrylic will advance to pre-commercial scale demonstration with a strategic development partner in 2011 on the way to full commercialization in 2014.
46. Pacific Bioscience (http://www.pacificbiosciences.com/)
    - Industry: Life Science
    - Business Model: Service
    - Size: Medium
    - Stage: Venture Funding
    - Innovation: Founded in 2004, developed SMRT DNA Sequencing System aimed at $1,000.
    - Status: Raised $109 million in Series F funding in 2010 with over 340 employees. Have a partnership with 11 technology companies and announced first 10 initial customers.
47. Plextronics (http://www.plextronics.com/index.aspx)
    - Industry: Chemicals and Materials
    - Business Model: Platform

- Size: Small
- Stage: Venture/Corporate Funding
- Innovation: Founded in 2002 as a spinout from Carnegie Mellon University, develops specialty Electronic Polymer materials and inks for use on organic light emitting displays and lighting as well as organic photovoltaics.
- Status: Developed a number of specialty photo and electronically active layers for customers globally and has a rapid innovation cycle for product development. Set the initial high records for organic photovoltaic performance. Recent announcement of non-aqueous ink for OLED applications well-received in the market.

48. Polyera (http://www.polyera.com/)
    - Industry: Semiconductor, Solar Energy
    - Business Model: Materials development, Solutions
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2005 with innovations from Northwestern University, Polyera develops cutting-edge organic semiconductor material and supply novel materials and technology for the printed and flexible electronics industry.
    - Status: With 30 employees, the company received NIST's Technology Innovation Program Award for $2 million and raised $4 million Series B investment from Solvay.
49. PreDx (http://predxdiabetes.com/)
    - Industry: Diagnostics
    - Business Model: Product
    - Size: Medium
    - Stage: Venture Funding
    - Innovation: Founded in 2002 as Tethys Bioscience, began development of PreDx, a biomarker based blood test for type 2 diabetes patients in 2005.
    - Status: Product was introduced in 2008 and recently raised $33 million of Series D financing in 2010 to support expanded commercialization.
50. Replenish (http://www.replenishinc.com/)
    - Industry: Medical Devices
    - Business Model: Products
    - Size: Small
    - Stage: Corporate Funding
    - Innovation: Founded in 2007, developing refillable and programmable pump that would be implanted in the eye to feed medicine for glaucoma or for age-related macular degeneration.
    - Status: Raised $10.25 million in 2009 with plans to enter clinical trials.
51. SiGNa Chemistry, Inc. (http://signachem.com/)
    - Industry: Chemicals and Materials
    - Business Model: Product
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2003, developed a method to stabilize reactive metals and their derivatives to deliver savings by reducing labor and waste while increasing energy efficiency and safety.

- Status: Have generated revenues above a million dollars and agreements with Sigma-Aldrich and Exxon. Serving all chemical manufacturing and supplying portable hydrogen delivery systems to the fuel cell industry.

52. Silecs Oy (http://www.silecs.com/)
    - Industry: Electronics
    - Business Model: Product
    - Size: Medium
    - Stage: Venture Funding
    - Innovation: Founded in 2000, developed siloxane chemistry products allowing chip production to be faster, cheaper, and more energy efficient.
    - Status: Distribution agreement with Nissan Chemicals and facilities in Finland. Raised $7.7 million for expansion in February 2006 and additional $7.87 million in funding in January 2009.
53. Smiths Detection, formerly Cyrano (http://www.smithsdetection.com)
    - Industry: Defense
    - Business Model: Products
    - Size: Large
    - Stage: Public
    - Innovation: Founded in 1997 through venture capital, from patented nanocomposite sensor technology developed at the California Institute of Technology, developed electronic nose using chemicals to sniff out explosives, food contaminants, and other compounds and to verify solvents and other chemicals
    - Status: The product Cyranose 320, commercialized in 2000, was the first major product development, as an efficient, affordable way to perform on-site analysis accurately. Company was acquired by Smiths Detection in 2004.
54. Starfire Systems (http://www.starfiresystems.com/)
    - Industry: Chemicals and Materials
    - Business Model: Platform
    - Size: Small
    - Stage: Venture/Corporate Funding
    - Innovation: Founded in 1988, with technology from Rennsselaer Polytechnic Institute, develops polymer-to-ceramic technologies with applications in aircraft components and lightweight rotors for car, bus, and train brakes.
    - Status: Approved supplier for NASA space shuttle. Impacted by recession and filed for Chapter 11 in March 2010.
55. Surface Logix (http://www.surfacelogix.com/)
    - Industry: Life Science
    - Business Model: Research
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 1999, developed The Pharmacomer Technology Platform to create New Chemical Entities (NCEs), targeting specific tissues and organ systems. Developed a drug that blocks fat from being absorbed by the body without liver-damaging side effects.
    - Status: Raised $20 million in Series E Funding ($15 million Venture Capital and $5 million loan) on March 2009 for Phase 2b studies for SLx-4090 in dyslipidemia, diabetes and obesity. Employed 35 people in 2009.

56. Symyx Solutions (http://www.symyx.com/)
    - Industry: Software
    - Business Model: Platform
    - Size: Medium
    - Stage: Public
    - Innovation: Founded in 1994, developed high-speed combinatorial software technology.
    - Status: Divested automation tools to focus on software; merged with Accelrys in 2010.
57. SynChem, Inc. (http://www.synchem.com/)
    - Industry: Life Science
    - Business Model: Service
    - Size: Small
    - Stage: Organic growth
    - Innovation: Founded in 1997, provides its expertise and services in organic and medicinal chemistry to pharmaceutical, drug discovery and biotechnology companies.
    - Status: Operating in both Chicago area and Shanghai with 60 employees in 2009. Industry: Biopharmaceutical
58. Theravance (http://www.theravance.com/)
    - Industry: Biopharmaceutical
    - Business Model: Research, Development and Commercialization
    - Size: Medium
    - Stage: Public
    - Innovation: Founded in 1996, developing various candidates in respiratory, bacterial infections, gastrointestinal motility dysfunction, cognitive disorders and pain.
    - Status: The RELOVAIR™ programs for the treatment of patients with COPD or asthma with GlaxoSmithKline are in Phase 3 clinical trials. RELOVAIR™ is an investigational drug, a combination of an ICS and a LABA, as a once-daily treatment for patients with COPD or asthma. The FDA approved VIBATIV™ (telavancin) for the treatment of adult patients with cSSSI caused by susceptible Gram-positive bacteria, including Staphylococcus aureus, both MRSA and MSSA strains. VIBATIV™ has also been approved in Canada. Theravance has a partnership with Astellas to commercialize VIBATIV™. Theravance recently reported results from a Phase 2 proof-of-concept study of TD-1211 for opioid-induced constipation.
59. Zettacore (http://zettacore.com)
    - Industry: Electronics
    - Business Model: Research
    - Size: Small
    - Stage: Venture Funding
    - Innovation: Founded in 2001, developed ionic liquids for energy storage applications, aimed towards portable electronics.
    - Status: Raised $55 million since 2001 and secured $21 million in Series C funding on May 2009 led by Panasonic to begin integrating technology into Panasonic Products. Employed 31 people in 2009.

Short Success Stories

Illumina:
Illumina was founded in April 1998 by David Walt, Ph.D., Larry Bock, John Stuelpnagel, D.V.M., Anthony Czarnik, Ph.D., and Mark Chee, Ph.D. While working with the CW Group, a venture capital firm, Bock and Stuelpnagel uncovered what would become Illumina's BeadArray technology at Tufts University and negotiated an exclusive license to that technology. Headquartered in San Diego, California, Illumina completed its initial public offering in July, 2000 with a market value of over $2 billion. Illumina currently offers microarray-based products and services for an expanding range of genetic analysis sequencing, including SNP genotyping, gene expression, and protein analysis.

http://www.illumina.com/company/history.ilmn
www.hoovers.com

GelTex Pharmaceuticals:
GelTex Pharmaceuticals was co-founded in 1993 by Robert J. Carpenter, James B. Tananbaum M.D., and George Whitesides, Ph.D. to develop human treatment with kidney failure. Whitesides' innovation includes Renagel, a drug that binds the harmful phosphates eliminating the harmful metallic accumulation. In December 2000, GelTex Pharmaceuticals was acquired for about $1 billion by Genzyme. The merger gives Cambridge, Massachusetts-based Genzyme access to two patent-protected, marketed products from GelTex - Renagel for renal disease and WelChol for lowering cholesterol.

http://www.rdmag.com/Awards/Scientist-Of-The-Year/2007/12/R-D-Magazine%E2%80%99s-42nd-Scientist-of-the-Year/
http://www.icis.com/Articles/2000/12/14/128730/genzyme-completes-1bn-geltex-pharma-acquisition.html
http://www.genzyme.com/corp/structure/timeline_genz.asp

Theravance:
Theravance was founded 1996 under the name Advanced Medicine, Inc. by George Whitesides, Ph.D, Mathai Mammen, M.D., PhD, and P. Roy Vagelos, M.D. The Company changed its name to Theravance, Inc. in April 2002. The Company is focused on the discovery, development and commercialization of small molecule medicines across a number of therapeutic areas including respiratory disease, bacterial infections and gastrointestinal motility dysfunction. In an alliance with its stakeholder GlaxoSmithKline (GSK), Theravance is developing a next-generation replacement for the asthma medication and for chronic obstructive pulmonary disorder. Theravance's other lead product, VIBATIV (or telavancin, developed in collaboration with Astellas), is an injectable antibiotic approved in 2009 to treat skin infections and hospital-acquired pneumonia.

www.Hoovers.com
http://www.marketwatch.com/investing/stock/THRX/profile
http://investor.theravance.com/management.cfm

Materia:
Materia was founded in 1998 to commercialize user-friendly olefin metathesis catalyst technology developed in the laboratories of Robert Grubbs, Ph.D. at Caltech. In 2008, Materia received a patent for its second generation catalyst technology. These high-efficiency catalysts enable ruthenium-based metathesis chemistry to progress from specialty to commodity applications. The technology delivers significant economic and environmental benefits at companies including BASF, Elevance, and Lanxess.
http://pubs.acs.org/isubscribe/journals/cen/89/i04/html/8904busc14.html
http://www.materia-inc.com/company/history/

DuPont Bioproduction of 1,3-Propanediol:
The joint development of an economic production processes for 1,3-propanediol by DuPont and Tate & Lyle is a success story for the creation of a new market for a (bulk) chemical facility to produce polymers from a renewable feedstock instead of petrochemicals. This bio-fermentation system converts corn sugar into 1,3-propanediol (glycol solution) for use in formulations and ingredient solvents where non-petroleum based ingredients are desired, and can replace propylene glycol and butylene glycol. This bioprocess has four advantages over the conventional process: smaller environmental footprint, lower operating costs, smaller capital investment, and greater sustainability due to use of renewable corn feedstock. Currently, the DuPont and Tate & Lyle Bio Products facility in Loudon, Tenn., produces 100 million pounds annually and is set to grow to meet the estimated $1 billion global market demand for 1,3-propanediol.
http://www2.dupont.com/Sorona/en_US/uses_apps/tatelyle/tate_lyle.html
http://pubs.acs.org/cen/coverstory/88/8815cover.html
http://www.prnewswire.com/news-releases/growing-demand-for-dupont-renewable-products-drives-global-commercialization-93430849.html
http://www.ncbi.nlm.nih.gov/pubmed/19075867
http://www.icis.com/blogs/green-chemicals/2010/05/dupont-tate-lyle-expands-bio-p.html
http://pubs.acs.org/cen/coverstory/84/8442cover3.html

Nine Sigma:
Nine Sigma was founded in 2000 by Mehran Mehregany, Ph.D., Goodrich Professor of Engineering Innovation, Case Western Reserve University. Nine Sigma helps other companies take advantage of "open innovation", to source innovative ideas, technologies, products and services from outside their organization quickly and effectively by connecting them with the best innovators from around the world. In 2008, NineSigma ranked among the top 20 percent of companies on the *Inc.* 5000 list of fastest growing private companies in the United States.
http://www.businessweek.com/innovate/content/jun2007/id20070611_139079.htm
http://www.ninesigma.com/WhatWeDo/AboutOpenInnovation.aspx#
http://www.ninesigma.com/WhoWeAre/OurTeam.aspx
http://pubs.acs.org/isubscribe/journals/cen/84/i12/html/8412bus4.html