Harrison F. Dillon

561 Eccles Avenue
South San Francisco, CA 94040
650-780-4777
hdillon@solazyme.com

Dynamic leader with a diverse background building a pioneering biotechnology company in the energy sector, securing funding, presenting corporate achievements to the media and scientific community, leading a scientific organization, attracting and recruiting the scientific advisory board and board of directors, developing and managing corporate intellectual property portfolio. Demonstrated success recruiting, motivating, coaching, and developing cross functional teams that deliver unparalleled results.

WORK EXPERIENCE

Solazyme Inc., President, CTO and Co-Founder, South San Francisco, CA 9/03-Present

- Created the core concepts and initial intellectual property for founding Solazyme
- Led the organization through growth from 2 founders through ~50 employees
- Collaborated with CEO and business team to secure $75M in funding through Series C
- Responsibility for building, leading, and managing the scientific infrastructure for the organization
- Joint responsibility with CEO/Co-Founder for growing the business and technology portfolio and managing strategic direction of company
- Manage the legal affairs of the company
- Develop intellectual property, manage IP portfolio, create and lead IP organization
- Inventor of numerous patent applications and one issued patent owned by the company
- Collaborate with CEO and business leads to develop strategic alliances, partnerships, and joint ventures on a global scale aimed at the commercialization of Solazyme's product offering
- Develop an action/accountability plan in order to meet timelines, exceed expectations, and position Solazyme as the only company in the world with our product offering
- Publicize and promote Solazyme's accomplishments through accepting and conducting interviews for TV, radio, magazines, and other media vehicles
- Recruited scientific and business advisory boards

Townsend and Townsend and Crew, Associate and Patent Agent, Palo Alto, CA 6/02-6/04

- Draft opinion letters, patent applications, and Office Action responses for biotechnology inventions
- Perform due diligence on pending patent applications for venture capital clients
- Perform freedom-to-operate opinions and information for biotechnology clients

Research Triangle Institute, Consultant, Research Triangle Park, NC 9/01-05/02

- Perform patentability and commercialization assessments on biotechnology innovations developed by RTI clients
- Prepare marketability and IP assessments for in-house RTI technology

Parsons Behle and Latimer, Summer Associate, Salt Lake City, UT, 5/02-9/02

- Draft Office Action responses and trade secret transactional agreements
- Review and amend patent license agreements
- Research On Sale Bar and Markman issues for patent infringement lawsuit

Office of Technology Transfer, University of Utah Research Foundation, Patent and Licensing Agent, **Salt Lake City, UT, 11/98-8/00**

- Manage the Foundation's biotechnology portfolio of active licenses, invention disclosures and patents
- Review and amend biotechnology patent applications and Office Actions
- Draft, negotiate, and close patent licenses on patents covering technology such as: Cardiac arrhythmia-associated SNPs for pharmacogenetics; Neurotransmitter receptor genes; Cardiac ion channel genes for drug discovery; Bacterial protein x-ray structure data for antibiotic design; Pathogen gene sequences for microarray diagnostics

Emory University Department of Microbiology and Immunology, Laboratory Technician, Atlanta, GA, 12/91-5/93

- Clone bacterial virulence genes
- Perform research for and draft manuscript for publication on *Streptococcus* bacterial virulence genes

EDUCATION

Duke University School of Law, Durham, NC, J.D., 2003

University of Utah, Salt Lake City, UT, Ph.D., Genetics, 1998

Emory University, Atlanta, GA, B.S., Biology, 1993

PROFESSIONAL CERTIFICATIONS

Member of United States Patent Bar, Registration No. 45,661
Member of California Bar Association

SELECTED PUBLICATIONS – PATENTS

- USE OF CELLULOSIC MATERIALS FROM CULTIVATION OF MICROORGANISMS, US Patent App. Publication Number 20090011480, RENEWABLE DIESEL AND JET FUEL FROM MICROBIAL SOURCES, US Patent App. Publication Number 20090047721, Donald E. Trimbur, Chung-Soon Im, Harrison F. Dillon, Anthony G. Day, Scott Franklin and Anna Coragliotti, June 2, 2008.

- RENEWABLE DIESEL AND JET FUEL FROM MICROBIAL SOURCES, US Patent App. Publication Number 20090047721, Donald E. Trimbur, Chung-Soon Im, Harrison F. Dillon, Anthony G. Day, Scott Franklin and Anna Coragliotti, June 2, 2008.

- SUCROSE FEEDSTOCK UTILIZATION FOR OIL-BASED FUEL MANUFACTURING, US Patent App. Publication Number 20090035842, Donald E. Trimbur, Chung-Soon Im, Harrison F. Dillon, Anthony G. Day, Scott Franklin and Anna Coragliotti, June 2, 2008.

- GLYCEROL FEEDSTOCK UTILIZATION FOR OIL-BASED FUEL MANUFACTURING, US Patent App. Publication Number 20090004715, Donald E. Trimbur, Chung-Soon Im, Harrison F. Dillon, Anthony G. Day, Scott Franklin and Anna Coragliotti, June 2, 2008.

- LIPID PATHWAY MODIFICATION IN OIL-BEARING MICROORGANISMS, US Patent App. Publication Number 20090061493, Donald E. Trimbur, Chung-Soon Im, Harrison F. Dillon, Anthony G. Day, Scott Franklin and Anna Coragliotti, June 2, 2008.

ARTHUR GROSSMAN
Chief of Genetics, Solazyme, Inc., 561 Eccles Avenue, S. San Francisco, CA 94080,
agrossman@solazyme.com

Professional Experience:

Present Position:	Staff Member (Since 1982)	Professor by courtesy
	Carnegie Institution of Washington	Department of Biology
	Department of Plant Biology	Stanford University
	260 Panama Street	Herrin Hall
	Stanford, California, 94305	Stanford, California 94305
	Telephone: (650) 325-1521	
Past Position:	Assist. Professor by courtesy, 1982-1989, Dept of Biology, Stanford University	
	Assoc. Professor by courtesy, 1989-2000, Dept of Biology, Stanford University	

Education and Research Experience:

Postdoctoral Fellow. 1978-1982. The Rockefeller University, Department of Cell Biology. Research: Uptake of Polypeptides into chloroplasts (Nam-Hai Chua, Advisor).

Ph.D. 1978. Indiana University, Department of Biological Sciences. Dissertation: Characterization of Photosynthetic Mutants in *Chlamydomonas reinhardtii* (Robert Togasaki, Advisor)

B.S. with Honors. 1973. Brooklyn College, New York. Major in Biology.

Honors, Services and Fellowships (since 2000):

2009 Gilbert Morgan Smith Medal
2007 Editorial Board Eukaryotic Cell
2005 Editorial Board Annu Rev Genet
2004 Geographical represented for the International Society of Photosynthesis Research (elected position)
2002 Darbaker Prize for work on microalgae (Botanical Society of America)
2001 Recipient of Lady Davis Fellowship
2000-2008 Editorial Board, Current Genetics
2000-2003 Scientific Advisory Board for the Wallenberg Consortium North
2000 Advisory Committee, Arizona State University Consortium to establish a NSF funded Biotechnology Center
2000-2004 Editorial Board, Plant and Cell Physiology
2000 Organizer of Symposium 'The Dynamics and Evolution of Light Harvesting Complexes (to honor Elizabeth Gantt)

1982-2002 Numerous ad hoc reviews for NSF and USDA, and some for NIH and DOE (as well as for a number of international agencies). I have also done numerous reviews for a variety of journals including Science, Nature, PNAS, The Plant Cell, EMBO Journal, The Plant Journal, Molecular Microbiology, Plant Physiology and Journal of Bacteriology.

Present Graduate Students:

Wirulda Pootakham. Acclimation of Chlamydomomas to sulfur deprivation.
Kate Rose Mackey. Photosynthesis and nutrient deprivation responses in marnine cyanobacteria.
Blaise Hamel. Photosynthesis at high temperatures.
Michelle Davision. Diversity of cyanobacteria in the hot springs.

Present Postdoctoral Fellows/Research Associates:

Claudia Catalanotti. Anoxic control of metabolism in Chlamydomonas reinhardtii.

David Gonzalez-Ballester. The acclimation of photosynthetic organisms to sulfur deprivation.
Wenqiang Yang. Anoxia and hydrogen production.
David Dewez. Understanding photosynthetic function through integration of informatic and experimental approaches.
Mark Heinnickel. Spectroscopic and fluorescence analysis of photosynthetic function.
Rosario Gomez. The physiology of the hot springs.

Academic/Industrial Affiliations:
EU consortium on 'Towards a better sunlight to biomass conversion efficiency' (Advisory Board)
Joint project with Martek Biosciences Corporation in Columbia, MD. Molecular manipulation of chromophytic algae to facilitate production of metabolites and specific lipids (1993-2000).
Consultant for Exelixis Pharmaceuticals.
Chief of Genetics, Solazyme.

Selected Publications

1. Dubini, A. Mus, F., Seibert, M., Grossman, A.R., Posewitz, M.C. (2009) Flexibility in anaerobic metabolism is revealed in a mutant of *Chlamydomonas reinhardtii* Lacking hydrogenase activity. J Biol Chem. **284**: 7201-13.
2. Huang, B., Wu, H., Bhaya, D., Grossman, A.R., Zare, R.N. (2007) Counting low-copy-number proteins in a single cell. Science. **315**: 81-84.
3. Ryu, W.Y, Huang, Z., Park, Z.S., Moseley, J., Grossman, A.R., Fasching, R.J., Prinz, F.B. (2008) Open Micro-fluidic System for *in situ* Electrochemical Atomic Force Microscopy Analysis of a Single Cell to Measure Photosynthetic Electron Transport. Lab on a Chip. **8**: 1460-1467.
4. Cardol. P., Bailleul, B., Derelle, E., Béal, D., Rappaport, F., Breyton, C., Bailey, S., Wollman, F.-A., Grossman, A.R., Moreau, H., Finazzi, G. (2008) A novel adaptation of photosynthesis in the marine, picoeukaryote *Ostreococcus* sp. Proc Natl Acad Sci USA. **105**: 7881-6.
5. Steunou, A.S., Jensen, S., Bhaya, D., Ward, D.M., Brecht, E, Grossman, A.R., Kühl, M. (2008) Energetic Considerations for Expression and Activity of the Nitrogenase in Hot Spring Microbial Mats. ISME J. **2**: 364-78.
6. Merchant, S., Prochnik, S. and the Chlamydomonas Genome Project Team (Rokhsar and Grossman, Corresponding authors) (2007) *Chlamydomonas reinhardtii* genome reveals evolutionary insights into critical animal- and plant-associated functions. Science. **318**: 245-250.
7. Bhaya, D. Khuri, N., Grossman, A.R., Cohan, F., Alexander, Simpson, C., Steunou, A., Bateson, M., Melendrez, M., Hamamura, N., Rhee, S., Ward, D., Miller, S., Heidelberg, J. (2007) Genomic, metagenomic and functional analyses of cyanobacteria from hot-spring microbial mats reveal unexpected diversity in nutrient utilization strategies. ISME J. **1**: 703-13.
8. Mus, F., Dubini, A., Seibert, M., Posewitz, M.C., Grossman, A.R. (2007) Anaerobic adaptation in *Chlamydomonas reinhardtii*: Anoxic gene expression, hydrogenase induction and metabolic pathways. J Biol Chem. **282**: 25475-25486.
9. Steunou, A.S., Bhaya, D., Bateson, M., Melendrez, M., Ward, D., Brecht, E., Peters, J.W., Kühl, K, Grossman, A.R. (2006) In Situ Analysis of Nitrogen Fixation and Metabolic Switching in Unicellular Thermophilic Cyanobacteria in Hot Spring Microbial Mat. Proc Natl Acad Sci USA. **103**: 2398-403.
10. Zaslavskaia, L., J. C. Lippmeier, C. Shih, A. R. Grossman and K. E. Apt (2001) Trophic conversion of an obligate photoautotrophic alga through metabolic engineering. Science **292**: 2073-2075.

PETER J. LICARI

561 Eccles Avenue
S. San Francisco, CA 94080
plicari@solazyme.com

SUMMARY

Progressive biotechnology industry professional with extensive general management experience in global operational and executive management roles. Capable of assembling and managing multidisciplinary teams able to communicate effectively, resolve problems, and meet objectives.

EXPERIENCE

Solazyme Inc., South San Francisco, CA — October 2008 – Present
Senior Vice President, Research and Development
Responsible for directing Molecular Biology, Discovery, Strain Development, and Analytical Chemistry activities.

Kosan Biosciences Inc., Hayward, CA — 1998 – 2008
Director, Process Sciences, August 1998 to Senior Vice President, Manufacturing and Operations, September 2008

Member of the executive management team responsible for strategy development, prioritization of projects within Kosan's portfolio, realignment of organization to reduce burn, and relationship development with organizations outside of Kosan. Responsible for directing Process Development, Manufacturing, Quality Assurance, Quality Control, Facilities, and EH&S departments. Accountable for managing the development of the preclinical and clinical candidate pipeline, including all manufacturing and compliance aspects.

- Instituted development and manufacturing groups to support in-house production of drug compounds. Internal manufacturing routinely allowed Kosan to enter Phase 1 clinical trials 8-12 months faster than outsourcing.
- Established fermentation and purification development as a competitive advantage for Kosan. Developed and managed interdisciplinary teams capable of routinely improving fermentation titers from <10 mg/L to 500-1000 mg/L. Routinely reduced cost of goods 20-500 fold with processes that were successfully scaled to the 3,000-10,000 L fermentation scale.
- Implemented Quality Control and Quality Assurance groups and systems to assure compliance with cGMPs and GLPs. Successfully completed six audits from US and European partner audits.
- Created and optimized manufacturing and distribution strategies for APIs and drug products to support preclinical and clinical programs. Established and managed all outsourced manufacturing and development contracts, including activities in India, Taiwan, Italy, Denmark, Czech Republic, Germany, and US.
- Incorporated standardized documentation process for development, manufacturing and compliance purposes that also serves to retain institutional knowledge. Wrote CMC regulatory filings, including 8 INDs, associated annual reports, amendments, and responses to inquiries in US, Canada, Europe, Russia, and Australia.

Massachusetts Biologics Laboratories, Boston, MA — 1996 – 1998
Director, Vaccine Manufacturing and Development: Responsible for the manufacture and development of licensed and investigational vaccines, including diptheria, tetanus, acellular pertussis and *Haemophilus influenzae* type b-tetanus conjugated vaccines. Accountable for manufacturing facility and supply chain management.

- Ensured that the production of vaccines was in accordance with cGMPs relating to the production of human biologics.
- Communicated and interacted with the FDA on matters relevant to vaccine production, including audits, ELA, PLA, and INDs.
- Led the development of manufacturing scale fermentation, purification, and formulation processes for acellular pertussis, *H. influenzae* type b-tetanus conjugate, and hemolytic uremic syndrome vaccines.

BASF Bioresearch Corporation, Worcester, MA 1993 – 1996

Senior Scientist: Supervisor of the fermentation process development group, responsible for the production of proteins from animal cell, yeast, and bacterial cultures. Accountable for developing scalable processes and the successful transfer of these processes to the manufacturing plant.

- Served as project leader for an anti-TNF human monoclonal antibody project (Humira®). Coordinated Fermentation Development, Purification Development, Manufacturing, Quality Control, and Quality Assurance groups for the development and manufacture of clinical material.
- Coordinated and supervised an interdisciplinary team responsible for the transfection and amplification of human monoclonal antibodies produced in CHO and NS/0 cell lines. Developed and optimized a CHO batch and successfully scaled this process to the 1000 L manufacturing scale.
- Developed a high density *Hansenula polymorpha* fermentation for the production of hirudin at the 20 L scale and successfully scaled this process to 3000 L. Responsible for the fermentation and recovery of this product.

Merck Research Labs, Merck & Co., Inc., 1992 – 1993

Engineering Associate: Involved in the development of a perfusion based process for attenuated hepatitis A virus production used to produce Vaqta®.

- Investigated attachment kinetics and planting uniformity of cells as well as factors that influence these properties in novel perfusion bioreactors.

SELECTED PUBLICATIONS

Buchanan G., Regentin R., Piagentini M., Rascher A., McDaniel R., Galazzo J., Licari P. Production of 8-demethyl-geldanamycin and 4,5-epoxy-8-demethyl-geldanamycin from a recombinant strain of *Streptomyces hygroscopicus. J. Nat. Prod.* 2005. 68(4): 607-610.

Frykman S.A., Tsuruta H., Licari P., "Assessment of fed-batch, semi-continuous, and continuous Epothilone D production processes." *Biotechnol Prog*. 2005. 21(4):1102-1108.

Desai R.P., Rodriguez E., Galazzo J.L., Licari P., "Improved bioconversion of 15-fluoro-6-deoxyerythronolide B to 15-fluoro-erythromycin A by overexpression of the eryK gene in *Saccharopolyspora erythraea.*" *Biotechnol Prog*. 2004 Nov-Dec; 20(6):1660-5.

EDUCATION

California Institute of Technology, Pasadena, CA

Ph.D., Chemical Engineering, Minor in Biology, 1992, Advisor: James E. Bailey

Tufts University, Medford, MA

M.S., Chemical Engineering, 1988. Advisor: Randal Swartz

B.S., Chemical Engineering, Second Major in Applied Physics, Summa Cum Laude, 1987

Pepperdine University, Malibu, CA,

M.B.A., 2005

Anthony Day, Ph.D.

Solazyme Inc., 561 Eccles Ave., South San Francisco, CA 94080

SUMMARY

A senior industrial biotechnologist with expertise in the design, and implementation of directed research programs. Demonstrated ability to lead multi-functional, multi-site research programs and identify and manage fruitful external relationships and collaborations. Over 20 years of biotechnology experience, project/functional leadership, technical-business development experience.

PROFESSIONAL EXPERIENCE

Solazyme Inc. **2006 - 2009**

VP of R & D

ADDAC Pharma Consultancy LLC, San Francisco, California **2005**

Founder and Principal

GENENCOR INTERNATIONAL, Palo Alto, California **1993 - 2005**

Director of Research

- Carried out due diligence on anti-inflammatory drug candidate, promoted in-licensing, and then led the project team that advanced it from research into pre-clinical development
- Managed a high performance team of 20 employees

Head of Structural Biology

- Led protease inhibitor program for the discovery of new therapeutics. This was a key program involving 25 employees at both the U.S. and European research sites
- Led the fungal anti-infective therapeutic discovery program, Genencor's first pharma program. This involved planning, initiating, and managing the program. Twenty employees reported to the project

Senior Scientist

- Chartered to form and lead Genencor's bioinformatics group. This involved hiring, software purchases, and promotion of the group's services within the company. The group is now an essential component of R&D
- Led a multi-site cellulase engineering project which led to patents being filed and a successful multi-million dollar product launch
- Led a short-term "hit and run" project to solve an urgent protein expression problem

Scientist

- Invented a new, genetically engineered amylase which is now a multi-million dollar product

CAMBRIDGE PROTEIN SCIENCE, Cambridge, England **1999 - 2000**

General Manager and Head of Research

- Co-founded a biotechnology company to commercialize novel protein expression technology

developed by a Nobel laureate and refolding technology developed at Cambridge University in the UK

- Conceived business model, wrote the business plan,and negotiated IP in-licensing and business contracts
- Signed term sheet for $5 million in venture capital from a consortium of three European venture companies.

EDUCATION

Post Doctoral Fellow **1989 - 1993**
University of Cambridge, England.
Supervisor: Professor Alan R. Fersht, FRS

Ph.D. **1989**
Imperial College of Science, Technology and Medicine, University of London, England.
Supervisor: Dr. C. P. Lichtenstein

M.Sc.
1985

University of British Columbia, Canada.
Supervisor: Dr. S. G. Withers

B.Sc. (Hons) **1981**
Portsmouth Polytechnic, England.
Chemistry

SELECTED PATENTS AND PUBLICATIONS

1. D. Trimbur, CS. Im, H. Dillon, Harrison, A. Day, S. Franklin, A. Coragliotti. PRODUCTION OF OIL IN MICROORGANISMS PCT/US2008/065563 (WO2008/151149)
2. D. Trimbur, CS. Im, H. Dillon, Harrison, A. Day, S. Franklin, A. Coragliotti. USE OF CELLULOSIC MATERIALS FOR CULTIVATION OF MICROORGANISMS 12/131,783 (US20090011480)
3. D. Trimbur, CS. Im, H. Dillon, Harrison, A. Day, S. Franklin, A. Coragliotti. RENEWABLE DIESEL AND JET FUEL FROM MICROBIAL SOURCES 12/131,773 (US20090047721)
4. D. Trimbur, CS. Im, H. Dillon, Harrison, A. Day, S. Franklin, A. Coragliotti. SUCROSE FEEDSTOCK UTILIZATION FOR OIL-BASED FUEL MANUFACTURING 12/131,793 (US20090035842)
5. D. Trimbur, CS. Im, H. Dillon, Harrison, A. Day, S. Franklin, A. Coragliotti. LIPID PATHWAY MODIFICATION IN OIL-BEARING MICROORGANISMS 12/131,804 (US20090061493)
6. Y. Mao, C. Lai, G. Vogtentanz, B. Schmidt, A. G. Day, J. Miller, D. Brandon, & D.Chen; Monoclonal Antibodies Against Soybean Bowman Birk Inhibitor Recognize The Protease Reactive Loops; Protein J; **24**, 275-282, (2005).
7. C. Eggers, I. Murray, V. Delmar, A.G.Day, & C. S. Craik; The periplasmic serine protease inhibitor ecotin protects bacteria against neutrophil elastase; Biochem J.; **379**, 107-18 (2004).
8. M. Sandgren, P. Gualfetti, A. Shaw, L. Gross, M. Saldajeno, A. G. Day, T. A. Jones, & C. Mitchinson; Comparison of Homologous Family 12 Glucosyl Hydrolases and Recruited Substitutions Important for Stability; Protein Science; **12**,848-60 (2003).
9. A. Shaw, R. Bott, C. Vonrhein, G. Bricogne, S. Power, A. G. Day; A Novel Combination Of Two Classic Catalytic Schemes; J. Mol. Biol.; **320**, 303-9 (2002).
10. Shaw, A R. Bott, & A. G. Day; Protein Engineering of alpha-Amylase for Low pH Performance; Curr. Opin. Biotechnol.; **10**, 349-52 (1999).

Scott Franklin
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sfranklin@solazyme.com

Scott Franklin, Ph.D. is Solazyme's Senior Director of Discovery and Molecular Biology. Prior to joining Solazyme, Dr. Franklin was a founder, V.P. of Technology Development, Board of Directors and Scientific Advisory Board member at Rincon Pharmaceuticals, Inc. where he played a critical role in helping to raise over $5 million in venture and angel capital to launch the company. During his tenure at the company he led a team that was the first in the field to undertake detailed characterization of recombinant proteins expressed in algal chloroplasts while developing new vectors and strategies for implementing high throughput screens. In the process they developed methods for strain improvement as it relates to recombinant protein productivity and expression. Dr Franklin played a key role in developing intellectual property for the company, securing Phase I SBIR funding relating to expression of mAbs in algal chloroplasts while managing over twelve research alliances with industry partners such as Biogen-Idec, Insmed, and Shire Pharmaceuticals as well as academic partners including The Scripps Research Institute, University of Erlangen, and the University of Alberta. Prior to co-founding Rincon Pharmaceuticals, Dr. Franklin also served as Director of Molecular Biology at Cyanotech Corporation, Kailua-Kona, HI. Where he directed work aimed at adding value to existing product lines through the application of molecular genetic approaches.
Throughout his career Dr. Franklin has played a key role at small start-up companies and been on the cutting edge of technologies that seek to exploit microalgae as bio-production platforms. Dr Franklin brings a unique breadth of experience spanning a range of disciplines from building molecular genetic capabilities *de novo* to working in large scale (600,000 L) photo bioreactor systems. For example during this time he has:

- Demonstrated for the first time expression, assembly and activity with a variety of complex monoclonal antibodies in algal chloroplasts.
- Developed new vectors and selection strategies to allow for expression of multiple genes in algal chloroplast genomes.
- Developed novel vectors for use in high throughput screens designed to identify strains and regulatory elements capable of supporting increased recombinant protein productivity.
- Led team that developed chloroplast transformation vectors, selection strategies and protocols resulting in increases in transformation efficiencies by three log orders.
- Developed tools to discriminate between various cyanobacterial isolates of commercial interest.
- Led teams that scaled cyanobacterial isolates from laboratory to commercial production scale (600,000 L).
- Led teams that developed cultivation and media optimization regimes for new cyanobacterial isolates and scaled to 30,000 L.
- Secured funding from National Institutes of Health (NIH) and National Oceanic and Atmospheric Administration (NOAA) around recombinant protein expression in algae.
- Repeatedly built and led molecular biology teams *de novo*

PhD. University of Texas, Austin.
Austin, TX 1985-1991. Demonstrated the feasibility of using nonsense suppression in plants to modify amino acid sequences of proteins as part of Ph.D. dissertation.
B.S. University of California at Davis
Davis, CA 1982 – 1985

Select Publications:

1. Barnes, D., Franklin, S., Schultz, J., Henry, R., Coragliotti, A. and Mayfield, S. **Contribution of 5' and 3' untranslated regions of plastid mRNAs to the expression of *Chlamydomonas reinhardtii* chloroplast genes**. *Mol. Gen. Genomics*. 2005, 274:625-636.
2. Franklin, S.E. and Mayfield, S.P. **Recent developments in the production of human therapeutic proteins in eukaryotic algae.** *Expert Opin. Biol. Ther.* 2005, **5**:225-235.
3. Mayfield, S.P. and Franklin, S: **Expression of human antibodies in eukaryotic micro-algae.** *Vaccine*. 2005. 23: 1828-1832
4. Franklin, S.E. and Mayfield, S.P. **Prospects for molecular farming in the green alga *Chlamydomonas reinhardtii***. *Curr. Opin. Plant Biol.* 2004, **7**:159-165.
5. Mayfield, S., Franklin, S.E., and Lerner, R. (2003) **Expression and assembly of a fully active antibody in algae**. Proc. Natl. Acad. Sci. USA 100: 438-442.
6. Franklin, S.E. Ngo, B., Efuet, E. and Mayfield, S.P. (2001) **Development of a GFP reporter gene for *Chlamydomonas reinhardtii* chloroplasts**. *The Plant Journal* 30: 733-744.
7. Franklin, S.E., Young,L., Watson,D., Cigan,A., Meyer, T. and Bulla, L.A. (1997) **Southern blot analysis of BT-R1, the *Manduca sexta* gene encoding the receptor for the Cry1Ab toxin of *Bacillus thuringiensis***. *Mol. Gen. Genet.* 256:517-524.
8. Franklin, S.E., Zwick, M.G. and Johnson, J.D. (1995) **Characterization and partial purification of two pre-tRNA 5' processing activities from Daucus carrota (carrot) suspension cells**. *The Plant Journal* 7:553-563.
9. Franklin, S.E., Lin, T.S. and Folk, W.R. (1992) **Construction and suppression of nonsense mutations which function in plant cells**. *The Plant Journal* 2:583-588.

Jonathan S. Wolfson
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EXPERIENCE

SOLAZYME, INC. - South San Francisco, CA — November 2003 – Present
Chief Executive Officer and Co-Founder
Solazyme is a biotechnology company specializing in the optimization of microalgae for production of biofuels, human/animal nutrition, chemicals and health and wellness materials.

- Responsible for overall corporate strategy and execution.
- Manage all business functions and commercialization
- Built a world class executive team and advisory board required to lead the company past proof of concept to large scale production and commercialization.
- Leading all efforts to establish critical strategic business partnerships; from developing a strategy, to attracting and securing partners, to managing and expanding existing relationships.
- Repeated demonstration of ability to optimize overall capital and cash flow efficiency - - successfully raised approximately $75 million to date with combination of equity, debt and government grants.

7TH ONLINE, INC. - New York, NY — November 2002 – November 2003
Vice President of Finance and Business Development
7thOnline is a venture backed provider of supply chain software targeted to the global retail industry. Applications include collaborative assortment and financial planning and order management technology.

- Ran corporate finance, including modeling, cash/debt management, and capital raising
  - Perform detailed financial and valuation analyses for pricing, business forecasting, project costing/financing, project appraisal, capital raising, and potential acquisitions
  - Build, maintain and update corporate and project level financial models
  - Manage external audit
- Managed financing round including the creation and delivery of roadshow financing presentations, due diligence reviews, preparation of documentation through successful closure.
- Together with Sales, responsible for developing, preparing and delivering sales collateral and presentations to generate sales bookings and revenue for the company by developing, pursuing and closing sales opportunities. During first nine months of employment, oversaw approximately 300% increase in annualized revenues.
- Responsible for identifying and building crucial strategic business partnerships; from developing a strategy, to attracting and securing partners, to managing and expanding existing relationships.

HUNTER COLLEGE (CITY UNIVERSITY OF NEW YORK) *- New York, NY* — *Fall 2001 – Fall 2003*
Adjunct Assistant Professor of Economics (Part Time – Evenings)

- Taught undergraduate classes each semester including lecturing, preparation of lesson plans exams and projects.
- Developed and administered novel standalone corporate malfeasance curriculum as part of advanced accounting and corporate governance course.

INVESTORTREE, INC. *- New York, NY* — *December 1999 – November 2002*
Co-President
InvestorTree was a financial software and services firm specializing in the installation and customization of lead generation (CRM) software and service tools to the financial advisory community.

- Ran strategy and business development team focusing on planning, project management, channel management, account management, and strategic alliances with direct responsibility for the negotiation and closure of agreements.
    - Partnerships created include: Fidelity Investments, AXA/Equitable, Raymond James, Fiserv/DATAlynx, Morningstar/Marketwatch and others
- Responsible for corporate finance function, including modeling, cash and debt management, and capital raising
    - Performed detailed financial and valuation analyses for pricing, business forecasting, project costing/financing, project appraisal, capital raising, and potential acquisitions
    - Built, maintained and updated corporate and project level financial models
    - Managed fundraising including roadshow and investor relations through closure
- Co-inventor of InvestorTree's analytical applications (Patent Application Serial No. 09/668,828)
- Ran technical and sales level marketing function including education on integration with ERP and CRM solutions and upgrading of software to provide additional CRM services.

POSITIONS HELD DURING GRADUATE SCHOOL:

MORGAN STANLEY *- New York, NY*

Summer Associate in Investment Banking Division

- Developed comprehensive financial model and prepared internal commitment documents and external board materials for $4 billion buy-side M & A assignment.
- Analyzed industry and company specific data and prepared quantitative and written summaries for management buyout of an airline.
- Prepared valuation and pitch materials for telecommunications IPO resulting in new business.

FRIED, FRANK, HARRIS, SHRIVER & JACOBSON *- New York, NY*

Summer Associate

- Member of deal team for Forstmann Little & Co. $1.4 billion LBO of Community Health Systems, Inc. and represented Merrill Lynch in IPO of Jack Nicklaus' Golden Bear Golf.

TRIARC COMPANIES, INC. - New York, NY

Associate (Full (Summer) and Part Time (Academic Years))

- Financial Analyst and legal coordinator on major corporate restructuring that included sale of Graniteville, Inc., IPO of National Propane Partners, LLP, and acquisition of Mistic Beverage.

DNA – PEOPLE'S LEGAL SERVICES *- Tuba City, AZ*

Case Handler with special admission to Navajo Bar (Full Time)

- Practiced employment, family, and disability advocacy law as legal aid case handler for indigent Navajos and Hopis on the Navajo reservation.

EDUCATION

NEW YORK UNIVERSITY: Leonard N. Stern School of Business - New York, NY — December 1999

Masters in Business Administration - Emphasis in Finance

NEW YORK UNIVERSITY: NYU School of Law - New York, NY — December 1999

Juris Doctor

EMORY UNIVERSITY - Atlanta, GA — May 1993

Bachelor of Arts, Political Science

- Deans List all Semesters
- Pi Sigma Alpha National Political Science Honors Society

Tyler W. Painter

561 Eccles Avenue, S. San Francisco, CA 94080 tpainter@solazyme.com

Accomplished finance executive with industry experience spanning operations in the U.S., Europe and Asia and across private, public and Fortune 500 companies. Proven ability to quickly analyze key business drivers and develop strategies to increase shareholder value.

HIGHLIGHTS

- Extensive capital structuring experience raising over $500 million in equity and debt in both private and public markets
- Corporate officer of $1B public software company with direct responsibility for managing corporate assets in excess of $200 million
- 10+ years leading Investor Relations strategies and managing Wall Street relationships
- Winner of 2006 Pinnacle Award for Risk Management from the Association of Financial Professionals for creating industry leading approach to global treasury and finance operations that enhanced internal controls and resulted in over $500K of annual savings
- Successfully implemented SOX 404 compliance across multiple finance departments, creating and implementing procedures that were highlighted as industry best practice

PROFESSIONAL EXPERIENCE

SOLAZYME • South San Francisco, CA — Oct 2007 - Present

Leader in Algal Biotechnology creating sustainable solutions for Renewable Fuels, Chemicals and Nutritional markets

Chief Financial Officer

- Responsible for managing capital structure to support rapid growth of company managed series C fundraising process resulting in equity raise in excess of $50 million
- Managing allocation of resources and cash burn against budgets and strategic initiatives
- Leading all administrative functions for company including operations, human resources and IT
- Enhancing existing procedures and processes to ensure compliance with all regulatory requirements including GAAP, SEC, government project accounting and project financing.

PMC-SIERRA • Vancouver, British Columbia, Canada — May 2007 – Oct 2007

Leading provider of broadband communications and storage semiconductors

Interim Vice President Finance & Corporate Controller

- Recruited for international assignment as key finance executive of $2 billion company.
- Accountable for strategic planning and leadership of global accounting organization, day-to-day operations management and SEC reporting.
- Recruited, developed and managed team of 40+ finance professionals, managers and support staff.
- Championed initiative to review and update accounting policies in order to ensure compliance with GAAP guidelines.

WIND RIVER SYSTEMS, INC. • Alameda, CA **Jan 2001 – April 2007**

Global leader in Device Software

Vice President Finance, Investor Relations & Corporate Treasurer • 2005 – 2007
Corporate Treasurer and Senior Director Investor Relations & Tax • 2003 - 2005
Director Investor Relations • 2001 - 2003

Investor Relations Achievements
Maximize shareholder value through actively managing Wall Street communications and relationships.

- Awarded 2007 Top 5 Best Corporate Governance Practices in the U.S by IR Global Rankings, a comprehensive ranking system for Corporate Governance and Earnings Release & Disclosures.
- Increased average holding period of top 35 institutional investors from 1 year to over 18 months.
- Managed financial disclosures and ensured compliance with Reg FD.

Corporate Treasury Achievements
Centralized treasury function to minimize risk, improve cash flow and maximize return on assets.

- Delivered returns that exceeded benchmarks in 16 out of 18 quarters for $200M+ portfolio
- Raised $150 million through subordinated convertible debt offering, secured various lines of credit totaling $60 million and managed global capital requirements for entities in 18 countries
- Consolidated banking systems to one global platform and reduced operating costs by 15%.
- Improved cash flow forecasting and reversed negative cash flow to positive $55 million annually.

CARSDIRECT • Culver City, CA ***1999 - 2001***
#1 online car buying resource (as rated by Forbes, Time and Yahoo!)

Director Finance and Investor Relations

Key member of start-up management team that grew company revenues to $160M in 2 years. Charged with developing corporate financial model and managing private fundraising.

- Developed annual operating budgets, monthly financial reporting of actuals vs. forecast and identified opportunities to improve performance against targets.
- Secured $300 million in equity funding from leading private investors.
- Managed S-1 filing process with investment banks, legal counsel and auditors.
- Acted as primary contact for investors to answer financial and strategic due diligence inquiries.

GAP, INC. • San Francisco, CA **1993 - 1999**
Fortune 200 Specialty apparel retailer
Senior Manager Investor Relations • 1998 - 1999
Senior Analyst / Manager – Investor Relations & International Finance • 1995-1998
Staff Accountant – Product Cost Management • 1993-1995

EDUCATION

B.S., Business Administration / Finance Management
California Polytechnic University • San Luis Obispo, CA

PROFESSIONAL AFFILIATIONS

National Investor Relations Institute
Association of Financial Professionals

TROY J. CAMPIONE, PhD. Senior V.P. Business Development, Solazyme, Inc.
561 Eccles Avenue • S. San Francisco, CA 94080 • tcampione@solazyme.com

Differentiating Strengths and Unique Qualifications

- **Stellar track record of monetizing technology across diverse industries and geographies built on rare combination of extensive business, technology and leadership experience**
- **High energy, passionate, ultra-creative optimist, strategist and visionary**
- **Consummate relationship builder and dealmaker**

TECHNICAL EXPERTISE Chemicals, energy/fuels (alternative/"green-tech"), catalysis, polymers, materials science

Professional Experience

SYMYX TECHNOLOGIES, INC. - SANTA CLARA, CA **2000 – OCT 2006**

Symyx is a $120+ million dollar, 400+ employee high tech company providing high throughput research and informatics technologies globally to the chemical, energy, polymer, pharmaceutical and electronics industries.

General Manager and Vice President (2004-Oct. 2006)
Collaborative Research, Strategic Alliances and Materials Licensing
($45M budget, 120 member scientific organization, P/L responsibility, leadership team)

Vice President- Business Development (2000-2004)
Alliances, Sales and Marketing

Grew the business by >25%/yr to $65M/yr @40% gross margin (2003-06) and attractive royalty upside by developing and executing on innovative business strategies and tactics and leading the organization to success
Leveraged Symyx's strong technology position to develop and successfully negotiate over $400M (million dollars) of new research services, products and licensing revenue

- $225+M, 5 year landmark alliance with ExxonMobil (2002)
- $120+M, 5 year alliance with The Dow Chemical Company (2004)
- $14M, 5 year collaboration with Univation Technologies (2003)
- $10M, 3 year collaboration with Innovene (formerly BP) (2003)
- $10+M, 4 year collaboration with Celanese (2001)
- $8+M collaboration with BP (2004)
- Plus several multi-million dollar research deals with Honda, ExxonMobil, Dow, JSR, and (2) undisclosed companies resulting in multiple commercial successes (through mid-2006)
- JSR – electronic applications – LFRP polymers (2)
- Dow Chemical – elastomeric and blocky polymers (2)
- Celanese – catalyst for vinyl acetate production (1)

EXXONMOBIL CHEMICAL - HOUSTON AND BAYTOWN, TX **1991 - 2000**

Worldwide Basic Chemicals Technology Manager (1997-2000)
($20M budget, 45 researchers, 27 labs and pilot plants) ***and***

Site Operations Manager *($7M/yr, 27 person organization)*

Led research and development activities for advanced catalyst and process technologies in support of 4 billion dollars/yr of light olefins production

- Managed multi-site R&D activities, most notably resulting in the advancement of breakthrough technologies in catalytic cracking and gas conversion
- Effectively orchestrated worldwide collaborative research activities with five institutes and private industry to deliver enhanced technology options
- Revamped global intellectual property and licensing strategy and aligned with business objectives resulting in stronger IP protection and lower costs

Effectively managed the safety, health, environmental, site services and operations of a 450 person R&D and Engineering complex

Intermediates Business Manager (1996-1997)
($600 M/yr business segment)

Delivered continued success and growth of the Vinyl Intermediates leadership business by championing strategic initiatives and delivering on earnings growth, operating targets and competitive positioning

- Evolved a compelling vision and strategic business agenda, translated into aggressive measurable goals and led a cross-functional business team to achieve growth and cost reduction targets
  - Aligned marketing, manufacturing and technology organizations to deliver on plans
  - Achieved $15M earnings growth and 5% cost reduction
  - Stewarded a $20M investment plan delivering 30% ROCE
- Negotiated complex feedstock, toll processing, IP license and new product development deals worth >$90M
- Improved and unified worldwide experience curves and competitive analysis methodology to strengthen ECC's strategic investment rationale

Multi-site Headquarters Safety Chairman *(15 member committee, 900 people)*

Department Head - Polymer Science Materials Characterization (1994-1996)
($8M budget, 34 researchers, 13 labs)- Lab operations, tech service

Senior Section Supervisor - Polymers Pilot Plants (1993-1994)
($12M operating budget, 37 scientists/engineers, 24 hour shift operation)
Semi-commercial development and scale-up activities

Strategic Business and Investment Planner - Intermediates (1991-1993)
(Prioritized, championed and secured the appropriation of $280M of capital investments including (2) major chemical plant expansions)

EXXON CHEMICAL COMPANY - BATON ROUGE, LA **1985 - 1991**

Technical Section Supervisor - Performance Products (1989-1991)
($2.5M budget, 12 engineers; also ***Investment Planner*** *($14M/yr))*
Plant operations and design; capital investment champion and steward

Senior Research Engineer - Intermediates Technology (1988-1989)
Research and development, modeling

Research Engineer - Intermediates Technology (1985-1988)
(3 patents for catalyst and process innovation)

EDUCATION

PhD Chemical Engineering, 1985 - University of Texas at Austin, 4.0 GPA
ME Chemical Engineering, 1982 - Tulane University, 4.0 GPA
BS Chemical Engineering, 1982 - Tulane University, cum laude
plus extensive executive business education at The Wharton School of Business, Cal Tech, University of Wisconsin Business School, and ExxonMobil

OTHER

Board of Editors - Industrial Research Institute
University of Texas at Austin – Department of Chemical Engineering – Advisory Committee
Numerous publications, articles and conference presentations

MATTHEW J. FROME
561 Eccles Avenue
South San Francisco, CA 94040
650-780-4777
mfrome@solazyme.com

EDUCATION

University of California at Berkeley
May 1995 *Master of Business Administration,* Walter A. Haas School of Business
May 1995 *Master of Public Health,* School of Public Health

Stanford University
June 1987 *Master of Science,* Department of Biology

University of Santa Clara
June 1985 *Bachelor of Science,* Department of Biology

EXPERIENCE

2005 – 2006 **FOCUS Biology, Inc.,** San Jose, CA
Business Development / Product Management
Founded start-up bioinformatics company developing machine learning algorithms for the analysis of genetic data. Raised initial start-up funds, and developed marketing and business plan. Signed agreements with beta partners, TGen, CHORI, and Celera Diagnostics. Created web-site, trade show booth, scientific posters and hand out materials generating a hundreds of leads. Led product development for use cases and feature priority developed through customer input.

2005 **Velocity11,** Menlo Park, CA
Consultant
Created business development plans for automation and software products slated for development.

1997 – 2005 **GE Healthcare/Amersham Biosciences/Molecular Dynamics,** Sunnyvale, CA
Business Development Manager
Global Sales Manager, Informatics
Responsible for sale and partner development for the discoveryHub Data Integration Technology and Scierra Laboratory Workflow Systems. Managed informatics sales specialists and worldwide regional sales organizations. Managed collaborative efforts for large custom software installations.
Marketing/Product Manager, Bioinformatics
Developed marketing plans, materials, and managed the product launch of the Scierra product line. Responsible for commercial relationships and product development of Amersham's strategic software
initiative, focusing on Laboratory Workflow Systems. Managed the sub-contracting partner, Cimarron Software, and various Amersham business units in Sweden, United Kingdom, Germany, Japan and United States. Provided support for Amersham's equity investment in Cimarron Software.

Gene Expression Product and Applications Manager
Lead the specification and development of the GenIII microarray platform, including software development and collaborations. Implemented the Microarray Technology Access Program (MTAP) which generated over $25 million in revenue and placed Molecular Dynamics as a leader in the area of spotted Gene Expression Microarrrays. Developed and managed a new team of scientists to liaison between Molecular Dynamics, Amersham and our MTAP Partners.

1995 – 1997 **Sangamo BioSciences, Inc.** Richmond, CA

Director of Business Development and Operations
First full time employee of biotechnology start-up developing the ZFP DNA binding technology. Responsible for the development, award, and execution of over $4.6 million in grant funding. Developed business plan for potential investors. Instituted research agreements with government and academic institutions. Negotiated lease agreements for research facilities and had responsibility for most business functions including marketing, personnel, intellectual property and accounting.

1989 – 1992 **Applied Biosystems Inc.** Foster City, CA

Field Sales Representative, New Jersey/New York

Generated over $8 million dollars in yearly sales. Led region in sales each year in the field.
Award for most DNA Sequencers sales, FY1992. Determined with R&D and customers solutions to technical problems encountered with dye-terminator sequencing.

Jeffrey L. Haney

REDACTED
EXEMPTION 6

PROFESSIONAL EXPERIENCE

CHEROKEE PHARMACEUTICALS, Riverside, PA **2008 - 2009**
Manufacturer of pharmaceutical and specialty chemicals

Director, Fermentation Services **2007 - Present**

- Responsible for all aspects of developing and managing the new *"Fermentation Contract Manufacturing Business"* for Cherokee Pharmaceuticals.
- Write and/or review Confidentiality Agreements for potential new customers.
- Follow up on initial contacts from potential customers to evaluate potential fit for the facility, including technical discussion and site visits.
- Write and/or review Pilot Manufacturing Agreements for the evaluation of products for potential new customers.
- Develop cost models for evaluation of economic feasibility, and also in support of negotiating cost for pilot and supply agreements.
- Recruit and develop a technical and operating staff to operate the new fermentation business.
- Direct all aspects of the manufacturing business, including assisting in technical coverage for new product demonstrations. To date six new product candidates have been evaluated at the production scale. Products categories' include biofuels, biopesticides, food products, and neutraceuticals.
- Interface with the VP of New Business Development for Cherokee Pharmaceuticals on all new potential customers.
- Develop financial operating plan (budget) for the new business and manage to that plan.

MERCK & CO., INC., Danville, PA **1979 - 2008**
Manufacturer of pharmaceuticals

Director of Manufacturing - Factory 6, 61, & 7 **2002 - 2007**

- Directed all aspect of the Active Pharmaceutical Ingredients (API) manufacturing for the Danville facility. Active ingredients produced at the site included antibiotics and animal health produces.
- Prepared and management a multi-million dollar budget for the manufacturing operation.
- Responsible for the Manufacturing Technical Support organization which assisted the Factories with day-to-day troubleshooting and process improvements.
- Managed a staff of approximately 150 individuals, 35 salaried and 115 hourly.
- Responsible for insure compliance in cGMP, Safety, and Environmental.
- Responsible for driving the employee involvement efforts within the manufacturing area. This effort included but was not limited to self-managed teams, operator driven process improvement efforts, and operator performed maintenance.
- Member of the Danville Plant Staff, Quality Council, Employee Involvement Steering Committee, Labor Contract Negotiating Team, Plant Staffing Committee, and other groups responsible for managing the Danville Plant.

Area Head - Factory 1 & 2 **1989 – 2002**

- Directed the fermentation and recovery operations in Factory 1 and 2 at the Danville facility, which was responsible for the production of biologics, food ingredients, animal health products, and other industrial fermentation products. Managed a staff of approximately 85 individuals, 17 salaried and 68 hourly.
- Prepared and management a multi-million dollar budget for the Factory 1 & 2 manufacturing operation.
- Served as the Plant Lead for the design, construction, and demonstration of the Xanthan Gum Process at the Danville facility. Upon completion of Phase II of this project, Danville was the second largest producer of Xanthan Gum for our customer in the world.
- Instituted a stand-alone quality system for the Xanthan Gum operation as part of the efforts to streamline operations and reduce costs. As part of this quality effort the Factory 1 & 2 area became the only area on the Danville site that received certification for ISO 9000, Kosher, HACCAP, and American Institute of Baking.
- Responsible for regulatory compliance, including cGMP's, Safety, and Environmental.
- Co-Chaired the Design Team that developed and eventually implemented the "First Self-Managed Work Teams" at the Danville Facility.

Department Head – Factory 1 & 2 **1986 - 1989**

- Directed the fermentation and recovery operations in Factory 1 and 2 at the Danville facility, which was responsible for the production of avermectin and asparaginase. Managed a staff of approximately 32 individuals, 9 salaried and 23 hourly.
- Prepared and management a multi-million dollar budget for the Factory 1 & 2 manufacturing operation.
- Responsible for process improvement efforts, achieving profit plan and yield targets for area.
- Responsible for regulatory compliance, including GMP's, and Safety and Environmental.

Senior Staff Microbiologist **1985 - 1986**

- Managed the Biotechnology Pilot Plant, comprised of 5L to 4000L scale fermentation vessels.
- Managed the performance of 5 hourly technicians.
- Responsible for scale-up of new processes, use testing of new raw materials, and general process improvements in support of manufacturing operations.

EDUCATION

Master of Science, Microbiology, University of Arkansas, Fayetteville, AR, 1979
Thesis: *"Effects of Trace Elements on the Growth and Metabolism of Rhizopus* nigricans"

Bachelor of Science, Biology/Chemistry, Arkansas Tech University, Russellville, AR, 1977

Gregory A. Spancake

REDACTED
EXEMPTION 6

PROFESSIONAL EXPERIENCE

CHEROKEE PHARMACEUTICALS, Riverside, PA **2008 - 2009**
Manufacturer of pharmaceutical and specialty chemicals

Department Head, Fermentation Services

- Manage the Technical Support Dept. which is responsible for providing technical support for the Fermentation Services contract manufacturing operation. Interact with the customers technical experts for technology transfer, develop process fits for the facility and provide support for process introductions.
- Review processes from potential new customers to determine if they are suitable opportunities for our business.
- Chair the Institutional Biosafety Committee to ensure facility compliance with NIH guidelines regarding recombinant organisms.

MERCK & CO., INC., Danville, PA **1996 - 2008**
Manufacturer of pharmaceuticals
Department Head, Factory 1 & 2 **2000 – 2005**

- Managed the fermentation and isolation facility responsible for production of asparaginase and xanthan gum.
- Responsible for process improvement efforts, achieving profit plan and yield targets for area and the implementation of a high performance work system.
- Responsible for regulatory compliance, including GMP's, ISO, Kosher, Safety and environmental.
- Shut down the xanthan gum process at the end of the contract and helped transition the facility to contract manufacturing.

Department Head, Factory 1 **1996 - 2000**

- Managed the F1 fermentation facility responsible for production of avermectin, asparaginase and xanthan gum.
- Responsible for process improvement efforts, achieving profit plan and yield targets for area and the implementation of a high performance work system.
- Responsible for regulatory compliance, including GMP's, ISO, Kosher, Safety and environmental.

GENENCOR INTERNATIONAL, INC., Rochester, NY **1991 - 1995**
Manufacturer of industrial enzymes and specialty chemicals

Manager, Microbiology

- Managed the Culture Collection which resulted in safekeeping of important company strains, generation of validated seed stocks for production processes, and ISO 9002 Certification.
- Provided technical support for Manufacturing Operations resulting in smooth introduction of new processes.
- Chaired the Institutional Biosafety Committee to ensure facility compliance with NY State and NIH guidelines regarding recombinant organisms.

- Managed strain and process development efforts for several industrial enzymes resulting in significant yield improvement.

EASTMAN KODAK CO., Bioproducts Div., Rochester, N.Y. **1988 – 1991**
Manufacturer of industrial enzymes, diagnostic enzymes and specialty chemicals

Laboratory Supervisor
- Managed Operations Microbiology and Analytical as part of plant management team. Labs provided necessary testing and monitoring of fermentations performed in Operations and performed development work in support of Bioproducts R&D activities.
- Provided technical leadership, personnel development and managed operating budget.
- Served as the Bioproduct Divisions Biosafety Officer and a member of the Eastman Kodak's Institutional Biosafety Committee.
- Managed the microbial assets of the division and served as microbiology consultant for the Biomanufacturing Program resulting in successful completion of numerous manufacturing contracts.
- Served as a member of the Contamination Control Task Force which investigated and solved contamination problems in the Operations Department.

MERCK & CO., INC., Danville, PA **1985 - 1988**
Manufacturer of pharmaceuticals

Senior Staff Microbiologist
- Managed culture development programs for the production of riboflavin, avermectin, cephalosporin C, and L-dopa, that improved productivity through the use of UV and chemical mutation.
- Developed culture storage procedures for new strains resulting in improved culture stability.

EDUCATION

Ph.D., Microbiology, Syracuse University, Syracuse, NY, 1985

B.S., Biology/Chemistry, University of Miami, Coral Gables, Fl, 1975

Additional training:

Fermentation Technology at Massachusetts Institute of Technology

John E. Cuzens

Senior Vice President, Chief Technology Officer, BlueFire Ethanol, Inc.

Education and Training:

University of California Berkeley, Bachelor of Science in Chemical Engineering.
College of Marin, Associate of Science in Physical Sciences

State of California, Registered Professional Mechanical Engineer, 1980, License No. 20891.
State of California, Contractors "A" License Responsible Managing Employee for ARK Energy, Inc. No.A700016

Past Member - American Institute of Chemical Engineers.

Selected Patents/Applications - 8 x "Method of Producing Sugars using Strong Acid Hydrolysis of Cellulosic and Hemicellulosic Materials" U.S.#5,562,777, 5,580,389, "Conversion of Glucose to Levulinic Acid" and other patents pending.

Technical Papers Presented and Published - "Sugar Cane Bagasse Conversion to Ethanol", World Renewable Energy Congress, Denver 1996. "Continuous Chromatographic Separation", National Renewable Energy Conference, Colorado Springs 1997, "Fuel-Flexible, Fuel Processors" ESD Conference, Los Angeles 1998, "Fuel Cells for Modern Buildings" Fuel Cell 98, Palm Springs.

Professional Experience:

BlueFire Ethanol, Inc, Irvine, Ca 2006 to present
Senior Vice President, Chief Technology Officer

Wahlco, Inc., Santa Ana, Ca. 2004- 2006
Director of Projects; Supervised Project Managers, Project Engineers and a scheduling group managing projects, mostly Utility or Engineer/Procure/Construction company clients. Process development and implementation of new urea to ammonia technology for the safe production of ammonia gas for Selective Catalytic Reduction environmental systems.

Applied Utility Systems, Inc., Irvine, Ca. 2001 – 2004
Manager of Operations, Manager of Project Management; Worked in a matrixed organization as the lead on development, design, fabrication and construction projects related to refinery

utility and chemical process industries. Responsible for customer satisfaction and maintenance of project deliverables quality. Completed $15MM SCR retrofit of 2 x FT4 30 MWe gas turbines on schedule and to satisfaction of customer while maintaining highest gross margin in company history.

Hydrogen Burner Technology, Inc., Long Beach, Ca. 1997-2001
Director of Manufacturing, Director of Engineering; Supervised engineering, manufacturing and project management personnel in this technology development company. Responsible for managing the fourteen ongoing contracts worth approximately $7 mm for clients such as the U.S. DOE, Los Alamos National Laboratory and several private companies. Helped double project backlog through responsive customer

service by exploiting compatible opportunities. Co-patent applicant for a process patent covering the integration of a fuel-flexible, fuel processor subsystem.

ARKENOL, Inc., Laguna Hills, Ca. 1991-1997
Director Engineering & Technology; Supervised the development and implementation of the ARKENOL "Acid Hydrolysis of Cellulosic Materials to Fermentable Sugars" technology. Supervised activities of employed and subcontract engineers & scientists in developing improvements and add-on technologies to further enhance the commercialization of the technology. Supporting company growth by making technical presentations, writing technical articles, networking and formulating technical proposals.

ARK Energy, Inc. (ARK), 1991-1997
Vice President Sacramento Power Inc., Senior Program Manager; Led Sacramento Ethanol and Power Cogeneration (SEPCO) project, a 149 mW gas fired combined cycle power plant and a 12.5 mm gal. per year cellulose to ethanol process plant. Sucesses included execution of Development Agreement and contracts with the Sacramento Municipal Utility District Financing Authority. Leader for CEQA, EIR permit activities at the CEC, for the AFC process. Lead technical coordinator for preliminary design for permitting and development of EPC contracts. Responsible for coordination of Political interface, and regulatory agencies. Project proponent speaker before community groups and public workshops. Responsible for schedule and budget performance compliance. Responsible Managing Engineer on ARK Energy, Inc. corporate State of California Contractors License for construction law and trade practice.

Senior Program Manager providing development assistance for potential projects in Brazil, Holland, Philippines, Indonesia, Italy, Australia, Hawaii, Texas and Minnesota. Potential projects included gas to coal fired 25-850 MW power plants with & without acid hydrolysis cogeneration thermal hosts. Biomass fired 2-50 MW utility plants for combined steam and power. Supported included cycle analysis, permit evaluation, technical communications, schedule and budget development.

DR. ROBERT J. WOOLEY

Education and Training

PhD Chemical Engineering, 12/1987
The University of Florida, Gainesville, Florida
MS Chemical Engineering, 8/1979
The University of Michigan, Ann Arbor, Michigan
BS Chemical Engineering, 5/1976
The University of Michigan, Ann Arbor, Michigan

Professional Experience

Abengoa Bioenergy New Technology, Lakewood, CO, 2007 to present
Director, Process Engineering

Responsible for the development of engineering for all technologies in the New Technology group. Leading a group of 10-15 engineers in the analysis of experimental data; development of models, PFDs, P&IDs and equipment and instrumentation specifications. Projects include cellulose conversion to ethanol and enhancements to the starch ethanol process.

National Renewable Energy Laboratory, Golden, CO, 2006 to 2007
Strategic Principal Engineer

Responsible for assuring appropriate and complete analyses, including risk and scenario analysis, are performed to support the objectives of the U.S. DOE's Biomass Program. Led the efforts to maintain a rigorous stage gate review process of all Biomass projects.

NatureWorks-Cargill, LLC, Minnetonka, MN, 2002 to 2006
Biomass Technology Manager

Led efforts (~ $5 million annually) to develop alternative feedstocks (biomass sugars) for the production of inexpensive lactic acid and polylactide polymers. This includesd managing Natureworks' efforts to develop intellectual property in biomass conversion, coordinate with strain and fermentation development at NatureWorks, and external partnerships with suppliers of supplemental technology (e.g., enzyme and feedstock collection). Responsible for process modeling and economic analysis of alternative biomass processes through the production of polylactide.

National Renewable Energy Laboratory, Golden, CO, 1991 to 2002
Technology Manager – Biofuels Program (2000 – 2002)

Accountable to DOE for the planning and execution of NREL and outside subcontracted research of approximately $20 million annually for advancing the National Biofuels Program. Considerable amount of stakeholder interaction and reviews were required to maintain support for the program at DOE and NREL.

Team Leader - Process Engineering (1996 – 1999)

Led a group of engineers responsible for developing and validating the process design and evaluating the economics through advanced modeling (ASPEN+) for the cellulosic biomass to ethanol process.

Manager/Team Leader - Alternative Fuels Data Center (1991 – 1995)
Advanced Separation Technologies, Inc., Lakeland, FL
Chief Engineer/Scientist
1989 to 1991

Development of laboratory and pilot plant procedures and design data for the ISEP continuous ion exchange and chromatographic process.

JSD Simulation Service Company, Houston, TX
Engineering Sales Manager
1988 to 1989
Responsible for program improvements and support of the process simulator ASPEN/SP.

Dow Corning Corporation, Midland, MI & Carrollton, KY
Engineering Specialist
1979 to 1984
Responsible for all chemical design aspects of several major capital projects.

Dow Chemical Company, Midland, MI
Chemical Engineer
1976 to 1978
Responsible for defining equipment and experiments to obtain scale-up information and customer samples of new products.

Selected Publications & Patents

"The eco-profiles for current and near-future NatureWorks® polylactide (PLA) production", with E. T. H. Vink, D. A. Glassner, J. J. Kolstad and R. P. O'Connor, Industrial Biotechnology, (3) 1, 58:81, 2007.

"Process for Fractionating Lignocellulosic Biomass into Liquid and Solid Products", with R. O'Connor, J. Kolstad, R. Kean, D. Glassner, B. Mastel, J. Ritzenthaler, J. Birk, J. Hettenhaus, R. Brooks, Patent Application WO 2007/120210 A2, October 25, 2007 "The Lignocellulosic Biorefinery: A Strategy to Return to a Sustainable Source of Fuels and Organic Chemicals" invited presentation with Davis Clements at Biorefinica 2004, Osnabrück, Germany, October 27-28, 2004.

"Standing Wave Design of Single and Tandem SMB Processes for Multicomponent Fractionation: Linear Isotherm Systems", with B. Hritzko, Y. Xie, N.-H. Wang, *AIChE J.*, (48) 2769, 2002.

"The effect of overliming on the toxicity of dilute acid pretreated lignocellulosics: the role of inorganics, uronic acids and ether-soluble organics", with T. Ranatunga, J. Jervis, R. Helm, J. McMillan, *Enzyme and Microbial Technology,* (27), 240, 2000.

"Process Design and Costing of Bioethanol Technology: A Tool for Determining the Status and Direction of Research and Development", *Biotechnology Progress,* with M. Ruth, D. Glassner, J. Sheehan, (15) 5:794, 1999.

"A Nine-Zone Simulated Moving Bed for the Recovery of Glucose and Xylose from Biomass Hydrolyzate" with Z. Ma and N.-H. L. Wang, *Industial and Engineering Chemistry*, (37) 9:3699, September 1998.

"Novel Three Component Separation Using a Single Continuous Counter-current Chromatographic Unit", presented at the AIChE National Meeting, Chicago, IL, November 1996.

ANDREA BOZZANO
UOP LLC
Development Manager - Renewables

EDUCATION AND TRAINING

Iowa State University	Chemical Engineering	MS	1989
University of Illinois	Chemical Engineering	BS	1987

PROFESSIONAL EXPERIENCE

UOP LLC	Manager, Renewables Development	Manager of Process Development group which is developing the UOP Ecofining and Renewable Jet technologies, as well as other technologies based on renewable feedstocks.
UOP LLC	Senior Specialist, Olefins and Detergents Development	Worked on a number of projects in development of technologies related to light olefins.
UOP LLC	Specialist, Olefins and Detergents Development	Worked on a number of projects in development of technologies related to detergents.
UOP LLC	Field Advisor	Worked on a number of startups in refineries and petrochemical plants.

Selected Publications

	PAT. NO.		Title
1	7,396,966	T	Olefinic feedstock treatment processes
2	7,189,885	T	Staged process for producing linear 2-phenyl-alkanes
3	6,979,394	T	Alkylaromatic process with catalyst regeneration
4	6,756,515	T	Dehydrogenation process using layered catalyst composition
5	6,740,789	T	Alkylaromatic process with catalyst regeneration
6	6,486,370	T	Dehydrogenation process using layered catalyst composition

SYNERGISTIC ACTIVITIES

AIChE membership

Renewable Energy Group

Glen Meier

Director, Technology & Feedstock Development

Renewable Energy Group®, Inc.,

For more than 15 years, Glen Meier has managed diverse and entrepreneurial businesses. Currently, Meier serves as Director of Technology & Feedstock Development at Renewable Energy Group®, Inc.

Renewable Energy Group, Inc., (REG) is a biodiesel industry sales leader offering a complete biodiesel solution. Renewable Energy Group markets REG-9000™ biodiesel through large petroleum companies and fuel distributors. REG-9000 is used by on-highway fleets, municipalities, and power generator, mining, military, home heating and agriculture applications. REG's network production facilities consist of state-of-the-art proprietary multiple-feedstock technology. Renewable Energy Group offers procurement and risk management, production operations and technology services in addition to alternative feedstock research and commercialization.

As Director of the Technology & Feedstock Development department, Mr. Meier investigates new technologies that are complementary to REG's business and assigns priorities, staff and resources to multiple projects. The Technology & Feedstock Development department is a core strength of REG and the department supports many other functions of the business including Quality, Production, Procurement and Construction.

Todd A. Potas, PE, QEP
e-mail: tapotas@NRG-LLC.com

Todd A. Potas, P.E., Q.E.P., is a Principal at Natural Resource Group, LLC (NRG) with over 22 years of professional experience. He is a registered Qualified Environmental Professional and a registered professional engineer in Minnesota, Nebraska, North Dakota, Louisiana and Florida. Todd leads our Renewables environmental services for the biofuels industries; his primary responsibilities include business development, quality assurance/quality control, project management, air permitting and environmental compliance management, regulatory negotiations, alternative fuel source and process engineering and control evaluations. Todd previously was a principal investigator for several coal beneficiation projects for coal companies, public utilities, and the U.S. Department of Energy, using technologies that included high temperature and pressure drying, oil agglomeration, and conventional physical cleaning of various coals. Todd's combination of experience with biofuels and coal technologies allows him to evaluate environmental and permitting challenges for advanced biofuels projects.

Selected Project Experience

- Ethanex Energy: Project Manager, environmental permitting for four 100 MMgal/yr ethanol plants to be built in Illinois, Missouri and Kansas; work included fractionation and biomass boiler processing.
- DOE Biofuels funding applications. Have assisted with NEPA process and other application requirements for serveral applicant proposers.
- Biofuels Energy: Principal, environmental permitting for two 100 MMgal/yr ethanol plants built in Fairmont, Minnesota and Wood River Nebraska; work includes storm water and water discharge permitting and stack testing on-going compliance.
- Red Trail Energy: Principal, environmental permitting for a 50 MMgal/yr ethanol plant operating in Richardton, North Dakota; project includes a coal-fired bubbling bed boiler and was permitted as a PSD major source with BACT analysis and NAAQS and Class I air dispersion modeling. Work includes support for on-going compliance.
- Vector Pipeline Project: managed air permitting for the Springfield, Indiana and Highland, Michigan compressor stations from start to finish.
- Guardian Pipeline Project: completed the RR9 for the Joliet, Illinois compressor station.
- Buccaneer Pipeline Project: completed the air quality section of the third-party EIS, including a compressor station, off-shore construction operations through a National Wildlife Refuge, and a liquid separation facility. The RR9 work included the required noise sections.
- International Paper, Mansfield, Louisiana: project task manager for installation and operation of a PSD pre-construction ambient air monitoring network for sulfur dioxide and MET parameters near a pulp and paper manufacturing facility.
- Waste Management, Inc. Air Quality Work: preparation of over 15 Title V air permit applications for landfill gas flare systems, reciprocating engines, and landfill gas-fired turbine generators; preparation of air quality training manuals and Title V emission inventory guidance for landfills; and presenter at four air quality seminars.

Education and Training

- M.E., Chemical Engineering, University of North Dakota, Grand Forks, North Dakota
- B.S., Chemical Engineering, University of North Dakota, Grand Forks, North Dakota

- Presenter, Annual Fuel Ethanol Workshop, Bryan and Bryan International, Air Emissions from Ethanol Plants, June 1999, 2001, 2002, 2003, 2005, Environmental Issues related to Biomass Gasification, June 2008, Moderator, June 2009.
- Presenter, DOE biomass programs, biofuels facility environmental siting and permitting issues, Argonne National Labs, February 2006.
- Instructor, Executive Enterprises, Inc., Air Quality Compliance Case Histories, Chicago, Illinois, 1997; Cincinnati, Ohio, 1997; and Farmington Hills, Michigan, 1997
- Prevention of Significant Deterioration/New Source Review Workshop, presented by EPA and the Air and Waste Management Association, Denver, Colorado, 1992

Close Form | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify)

* 3. Date Received: 06/30/2009

4. Applicant Identifier:

5a. Federal Entity Identifier:

* 5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Solazyme, Inc.

* b. Employer/Taxpayer Identification Number (EIN/TIN): 33-1077078

* c. Organizational DUNS: 145862012

d. Address:

* Street1: 561 Eccles Avenue
Street2:
* City: South San Francisco
County: San Mateo
* State: CA: California
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 94080

e. Organizational Unit:

Department Name:

Division Name:

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:
* First Name: Anthony
Middle Name:
* Last Name: Day
Suffix: Ph.D

Title: Vice President of Research and Development

Organizational Affiliation: Solazyme, Inc.

* Telephone Number: 650 780-4777
Fax Number: 650 871-4810

* Email: tday@solazyme.com

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

9. Type of Applicant 1: Select Applicant Type:

R: Small Business

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Golden Field Office

11. Catalog of Federal Domestic Assistance Number:

81.087

CFDA Title:

Renewable Energy Research and Development

*** 12. Funding Opportunity Number:**

DE-FOA-0000096

* Title:

Recovery Act - Demonstration of Integrated Biorefinery Operations

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

*** 15. Descriptive Title of Applicant's Project:**

Solazyme Integrated Biorefinery (SzIBR): Diesel Fuels from Heterotrophic Algae

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Close Form | Previous | Next | Print Page | About

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424

Version 02

16. Congressional Districts Of:

* a. Applicant: CA-012 * b. Program/Project: PA-010

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 01/01/2010 * b. End Date: 03/31/2013

18. Estimated Funding ($):

* a. Federal	21,765,738.00
* b. Applicant	
* c. State	
* d. Local	REDACTED EXEMPTION 4
* e. Other	
* f. Program Income	
* g. TOTAL	

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)**

☐ Yes ☒ No Explanation

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:	
* First Name:	Jonathan
Middle Name:	
* Last Name:	Wolfson
Suffix:	
* Title:	Chief Executive Officer
* Telephone Number:	650 780-4777
Fax Number:	650 871-4810
* Email:	jwolfson@solazyme.com
* Signature of Authorized Representative:	Matthew Frome
* Date Signed:	06/30/2009

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Standard Form 424 (Revised 10/2005)
Prescribed by OMB Circular A-102

OMB Number: 4040-0004
Expiration Date: 01/31/2009

Application for Federal Assistance SF-424 Version 02

*** Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

Applicant Name: Solazyme

Award Number: DE-FOA-0000096

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Demonstration of Integrated Biorefinery Operations	81.087			$21,765,738		
2.					REDACTED EXEMPTION 4	
3.						
4.						
5. Totals		$0		$21,765,738		

Section B - Budget Categories

6. Object Class Categories	Grant Program, Function or Activity (1)	(2)	(3)	(4)	Total (5)
a. Personnel					
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual					
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)					
j. Indirect Charges					
k. **Totals** (sum of 6i-6j)					
7. Program Income					

REDACTED EXEMPTION 4

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SF-424A (Rev. 4-92)
Prescribed by OMB Circular A-102

Section C - Non-Federal Resources

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) **Totals**
8. Demonstration of Integrated Biorefinery Operations				
9.				
10.		REDACTED EXEMPTION 4		
11.				
12. **Total** (sum of lines 8 - 11)				

Section D - Forecasted Cash Needs

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th quarter
13. Federal					
14. Non-Federal			REDACTED EXEMPTION 4		
15. **Total** (sum of lines 13 and 14)					

Section E - Budget Estimates of Federal Funds Needed for Balance of the Project

(a) Grant Program	**Future Funding Periods (Years)** (b) First	(c) Second	(d) Third	(e) Fourth
16. Demonstration of Integrated Biorefinery Operations				
17.				
18.		REDACTED EXEMPTION 4		
19.				
20. **Total** (sum of lines 16-19)				

Section F - Other Budget Information

21. Direct Charges	$23,142,869	22. Indirect Charges	EX 4

23. Remarks

Instructions for the SF-424A

Public Reporting Burden for this collection of information is estimated to average 3.0 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Please do not return your completed form to the Office of Management and Budget; send it to the address provided by the sponsoring agency.

General Instructions
This form is designed so that application can be made for funds from one or more grant programs. In preparing the budget, adhere to any existing Federal grantor agency guidelines which prescribe how and whether budgeted amounts should be separately shown for different functions or activities within the program. For some programs, grantor agencies may require budgets to be separately shown by function or activity. For other programs, grantor agencies may require a breakdown by function or activity. Sections A, B, C, and D should include budget estimates for the whole project except when applying for assistance which requires Federal authorization in annual or other funding period increments. In the later case, Sections A, B, C, and D should provide the budget for the first budget period (usually a year) and Section E should present the need for Federal assistance in the subsequent budget periods. All applications should contain a breakdown by the object class categories shown in Lines a-k of Section B.

Section A. Budget Summary Lines 1-4 Columns (a) and (b)
For applications pertaining to a **single** Federal grant program (Federal Domestic Assistance Catalog number) and **not requiring** a functional or activity breakdown, enter on Line 1 under Column (a) the catalog program title and the catalog number in Column (b).

For applications pertaining to a **single** program **requiring** budget amounts by multiple functions or activities, enter the name of each activity or function on each line in Column (a), and enter the catalog number in Column (b). For applications pertaining to multiple programs where none of the programs require a breakdown by function or activity, enter the catalog program title on each line in **Column** (a) and the respective catalog number on each line in Column (b).
For applications pertaining to **multiple** programs where one or more programs **require** a breakdown by function or activity, prepare a separate sheet for each program requiring the breakdown. Additional sheets should be used when one form does not provide adequate space for all breakdown of data required. However, when more than one sheet is used, the first page should provide the summary totals by programs.

Lines 1-4, Columns (c) through (g)

For new applications, leave Columns (c) and (d) blank. For each line entry in Columns (a) and (b), enter in Columns (e), (f), and (g) the appropriate amounts of funds needed to support the project for the first funding period (usually a year).

For continuing grant program applications, submit these forms before the end of each funding period as required by the grantor agency. Enter in Columns (c) and (d) the estimated amounts of funds which will remain unobligated at the end of the grant funding period only if the Federal grantor agency instructions provide for this. Otherwise, leave these columns blank. Enter in columns (e) and (f) the amounts of funds needed for the upcoming period. The amount(s) in Column (g) should be the sum of amounts in Columns (e) and (f).

For supplemental grants and changes to existing grants, do not use Columns (c) and (d). Enter in Column (e) the amount of the increase or decrease of Federal funds and enter in Column (f) the amount of the increase or decrease of non-Federal funds. In Column (g) enter the new total budgeted amount (Federal and non-Federal) which includes the total previous authorized budgeted amounts plus or minus, as appropriate, the amounts shown in Columns (e) and (f). The amount(s) in Column (g) should not equal the sum of amounts in Columns (e) and (f).

Line 5—Show the totals for all columns used.

Section B. Budget Categories
In the column headings (a) through (4), enter the titles of the same programs, functions, and activities shown on Lines 1-4, Column (a), Section A. When additional sheets are prepared for Section A, provide similar column headings on each sheet. For each program, function or activity, fill in the total requirements for funds (both Federal and non-Federal) by object class categories.

Lines 6a-i—Show the totals of Lines 6a to 6h in each column.

Line 6j—Show the amount of indirect cost.

Line 6k—Enter the total of amounts on Lines 6i and 6j. For all applications for new grants and continuation grants the total amount in column (5), Line 6k, should be the same as the total amount shown in Section A, Column (g), Line 5. For supplemental grants and changes to grants, the total amount of the increase or decrease as shown in Columns (1)-(4), Line 6k should be the same as the sum of the amounts in Section A, Columns (e) and (f) on Line 5.
Line 7—Enter the estimated amount of income, if any, expected to be generated from this project. Do not add or subtract this amount from the total project amount. Show under the program narrative statement the nature and source of income. The estimated amount of program income may be considered by the federal grantor agency in determining the total amount of the grant.

Section C. Non-Federal Resources

Lines 8-11—Enter amounts of non-Federal resources that will be used on the grant. If in-kind contributions are included, provide a brief explanation on a separate sheet.

Column (a)—Enter the program titles identical to Column (a), Section A. A breakdown by function or activity is not necessary.

Column (b)—Enter the contribution to be made by the applicant.

Column (c)—Enter the amount of the State's cash and in-kind contribution if the applicant is not a State or State agency. Applicants which are a State or State agencies should leave this column blank.

Column (d)—Enter the amount of cash and in-kind contributions to be made from all other sources.

Column (e)—Enter totals of Columns (b), (c), and (d).

Line 12—Enter the total for each of Columns (b)-(e). The amount in Column (e) should be equal to the amount on Line 5, Column (f) Section A.

Section D. Forecasted Cash Needs

Line 13—Enter the amount of cash needed by quarter from the grantor agency during the first year.

Line 14—Enter the amount of cash from all other sources needed by quarter during the first year.

Line 15—Enter the totals of amounts on Lines 13 and 14.

Section E. Budget Estimates of Federal Funds Needed for Balance of the Project

Lines 16-19—Enter in Column (a) the same grant program titles shown in Column
(a), Section A. A breakdown by function or activity is not necessary. For new applications and continuation grant applications, enter in the proper columns amounts of Federal funds which will be needed to complete the program or project over the succeeding funding periods (usually in years). This section need not be completed for revisions (amendments, changes, or supplements) to funds for the current year of existing grants.
If more than four lines are needed to list the program titles, submit additional schedules as necessary.

Line 20—Enter the total for each of the Columns (b)-(e). When additional schedules are prepared for this Section, annotate accordingly and show the overall totals on this line.

Section F. Other Budget Information

Line 21—Use this space to explain amounts for individual direct object-class cost categories that may appear to be out of the ordinary or to explain the details as required by the Federal grantor agency.

Line 22—Enter the type of indirect rate (provisional, predetermined, final or fixed) that will be in effect during the funding period, the estimated amount of the base to which the rate is applied, and the total indirect expense.

Line 23—Provide any other explanations or comments deemed necessary.

REDACTED

FOIA EXEMPTION 4

REDACTED

FOIA EXEMPTION 4

REDACTED

FOIA EXEMPTION 4

REDACTED

FOIA EXEMPTION 4

REDACTED

FOIA EXEMPTION 4

REDACTED

FOIA EXEMPTION 4

REDACTED

FOIA EXEMPTION 4

REDACTED

FOIA EXEMPTION 4

REDACTED

FOIA EXEMPTION 4

PMC123.1 - Budget Justification for SF 424A Budget

Instructions and Summary

Award Number: _____ Date of Submission: _____

Award Recipient: Solazyme Form submitted by: Abengoa Bioenergy

(May be award recipient or sub-recipient)

Please read the instructions on each page before starting.
If you have any questions, please ask your DOE contact. It will save you time!

On this form, provide detailed support for the estimated project costs identified on the SF-424A form (Budget).

- The dollar amounts on this page must match the amounts on the associated SF-424A.
- The award recipient and each sub-recipient with estimated costs of $100,000 or more must complete this form and a SF-424A form.
- The total budget presented on this form and on the SF424A must include both Federal (DOE), and Non-Federal (cost share) portions, thereby reflecting TOTAL PROJECT COSTS proposed.
- For costs in each Object Class Category on the SF-424A, complete the corresponding worksheet on this form (tab at the bottom of the page).
- All costs incurred by the preparer's sub-recipients, vendors, contractors, consultants and Federal Research and Development Centers (FFRDCs), should be entered only in section f. Contractual. All other sections are for the costs of the preparer only.

SUMMARY OF BUDGET CATEGORY COSTS PROPOSED

(Note: The values in this summary table are from entries made in each budget category sheet.)

CATEGORY	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Total Costs	Project Costs %	Comments (Add comments as needed)
a. Personnel						
b. Fringe Benefits						
c. Travel						
d. Equipment						
e. Supplies						
f. Contractual						
Sub-recipient						
FFRDC						
Vendor						
Total Contractual						
g. Construction						
h. Other Direct Costs						
i. Indirect Charges						
Total Project Costs						

REDACTED
EXEMPTION 4

Additional Explanations/Comments (as necessary)

a. Personnel

PLEASE READ!!!

List costs solely for employees of the entity completing this form (award recipient or sub-recipient). All other personnel costs (of subrecipients or other contractual efforts of the entity preparing this) must be included under f., Contractual. This includes all consultants and FFRDCs.

Identify positions to be supported. Key personnel should be identified by title. All other personnel should be identified either by title or a group category. State the amounts of time (e.g., hours or % of time) to be expended, the composite base pay rate, total direct personnel compensation and identify the rate basis (e.g., actual salary, labor distribution report, technical estimate, state civil service rates, etc.).

Add rows as needed. Formulas/calculations will need to be entered by the preparer of this form. Please enter formulas as shown in the example.

Task # and Title	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Project Total Hours	Project Total Dollars	Rate Basis
		Time (Hours)	Pay Rate ($/Hr)	Total Budget Period 1	Time (Hours)	Pay Rate ($/Hr)	Total Budget Period 2	Time (Hours)	Pay Rate ($/Hr)	Total Budget Period 3			
1. Generation 2A Receiver Design													
EXAMPLE	Sr. Engineer												
ONLY!!!	Electrical engineers												
	Technician												
1. (Task 1 Title)													
2. (Task 2 Title)													
3. (Task 3 Title)													
etc.													

REDACTED
EXEMPTION 4

Task # and Title	Position Title	Budget Period 1			Budget Period 2			Budget Period 3			Project Total Hours	Project Total Dollars	Rate Basis
		Time (Hours)	Pay Rate ($/Hr)	Total Budget Period 1	Time (Hours)	Pay Rate ($/Hr)	Total Budget Period 2	Time (Hours)	Pay Rate ($/Hr)	Total Budget Period 3			
	Total Personnel Costs												

Additional Explanations/Comments (as necessary)

REDACTED
EXEMPTION 4

b. Fringe Benefits

	Budget Period 1	Budget Period 2	Budget Period 3	Total
Rate applied:				
Total fringe requested:	REDACTED EXEMPTION 4			

A federally approved fringe benefit rate agreement, or a proposed rate supported and agreed upon by DOE for estimating purposes is required if reimbursement for fringe benefits is requested. Please check (X) one of the options below and provide the requested information, if it has not already been provided to the Contracting Officer, OR if it has changed since it was. Calculate the fringe rate and enter the total amount in Section B, line 6.b. ("Fringe Benefits") of form SF-424A.

____ **A fringe benefit rate has been negotiated with, or approved by, a federal government agency. A copy of the latest rate agreement is included with this application, and will be provided electronically to the Contracting Officer for this project.**
(When this option is selected, a presentation of the budget that demonstrates the appliction of the approved rate, to arrive at the proposed fringes benefits dollars should also be provided.)

X **There is not a current, federally approved rate agreement negotiated and available.**
(When this option is checked, the entity preparing this form shall submit a rate proposal in the format provided at the following website, or a format that provides the same level of information and which will support the rates being proposed for use in performance of the proposed project. Go to https://www.eere-pmc.energy.gov/forms.aspx and select PMC 400.2 Sample Rate Proposal.)

itional explanation/comments (as necessary)

REDACTED
EXEMPTION 4

c. Travel

PLEASE READ!!!

Provide travel detail as requested below, identifying total Foreign and Domestic Travel as separate items. Purpose of travel are items such as professional conference, DOE sponsored meeting, project management meeting, etc. The Basis for Estimating Costs are items such as past trips, current quotations, Federal Travel Regulations, etc.

All listed travel must be necessary for performance of the Statement of Projecct Objectives.

Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

Purpose of travel	No. of Travelers	Depart From (not required for domestic travel)	Destination (not required for domestic travel)	No. of Days	Cost per Traveler	Cost per Trip	Basis for Estimating Costs
Budget Period 1							
Domestic Travel							
EXAMPLE ONLY!!! Visit to PV cell mfr. to set up vendor agreement							
Domestic Travel subtotal							
International Travel							
International Travel subtotal							
Budget Period 1 Total							

REDACTED
EXEMPTION 4

Purpose of travel	No. of Travelers	Depart From (not required for domestic travel)	Destination (not required for domestic travel)	No. of Days	Cost per Traveler	Cost per Trip	Basis for Estimating Costs
Budget Period 2							
Domestic Travel							
Domestic Travel subtotal							
International Travel							
International Travel subtotal							
Budget Period 2 Total							
Budget Period 3							
Domestic Travel							
Domestic Travel subtotal							
International Travel							
International Travel subtotal							
Budget Period 3 Total							
PROJECT TOTAL							

REDACTED
EXEMPTION 4

Additional Explanations/Comments (as necessary)

d. Equipment

PLEASE READ!!!

Equipment is generally defined as an item with an acquisition cost greater than $5,000 and a useful life expectancy of more than one year. Further definitions can be found at 10 CFR 600 found on the PMC Recipient Resources Forms page at https://www.eere-pmc.energy.gov/Forms.aspx#regs .

List all proposed equipment below, providing a basis of cost such as vendor quotes, catalog prices, prior invoices, etc., and briefly justifying its need as it applies to the Statement of Project Objectives. If it is existing equipment, and the value of its contribution to the project budget is being shown as cost share, provide logical support for the estimated value shown. If it is new equipment which will retain a useful life upon completion of the project, provide logical support for the estimated value shown.

For equipment over $50,000 in price, also include a copy of the associated vendor quote or catalog price list.

Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
				dget Period 1	
EXAMPLE ONLY!!! Thermal shock chamber					
				REDACTED EXEMPTION 4	
Budget Period 1 Total					
				dget Period 2	
Budget Period 2 Total					

Equipment Item	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 3					
				REDACTED EXEMPTION 4	
Budget Period 3 Total					
PROJECT TOTAL					

Additional Explanations/Comments (as necessary)

e. Supplies

PLEASE READ!!!

Supplies are generally defined as an item with an acquisition cost of $5,000 or less and a useful life expectancy of less than one year. Supplies are generally consumed during the project performance. Further definitions can be found at 10 CFR 600 found on the PMC Recipient Resources Forms page at https://www.eere-pmc.energy.gov/Forms.aspx#regs.

List all proposed supplies below, providing a bases of cost such as vendor quotes, catalog prices, prior invoices, etc., and briefly justifying the need for the Supplies as they apply to the Statement of Project Objectives. Note that Supply Items must be direct costs to the project at this budget category, and not duplicative of supply costs included in the indirect pool that is the basis of the indirect rate applied for this project.

Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 1					
EXAMPLE ONLY!!! Wireless DAS components					
Budget Period 1 Total					
Budget Period 2 Total					

REDACTED
EXEMPTION 4

General Category of Supplies	Qty	Unit Cost	Total Cost	Basis of Cost	Justification of need
Budget Period 3					
		REDACTED			
		EXEMPTION 4			
Budget Period 3 Total					
PROJECT TOTAL					

Additional Explanations/Comments (as necessary)

f. Contractual

PLEASE READ!!!

The entity completing this form must provide all costs related to sub-recipients, vendors, contractors, consultants and FFRDC partners in the applicable boxes below.

Sub-recipients (partners, sub-awardees):
For each sub-recipient with total project costs of $100,000 or more, a separate SF-424A budget and PMC123.1 budget justification form must be submitted. These sub-recipient forms may be completed by either the sub-recipients themselves or by the preparer of this form. The budget totals on the sub-recipient's forms must match the sub-recipeint entries below.

The preparer of this form need only provide further support of the completed sub-recipient budget forms as they deem necessary. The support to justify the budgets of sub-recipients with estimated costs less than $100,000 may be in any format, and at a minimum should provide what Statement of Project Objectives task(s) are being performed, the purpose/need for the effort, and a basis of the estimated costs that is considered sufficient for DOE evaluation.

Vendors (includes contractors and consultants):
List all vendors, contractors and consultants supplying commercial supplies or services used to support the project. The support to justify vendor costs (in any amount) should provide the purpose for the products or services and a basis of the estimated costs that is considered sufficient for DOE evaluation.

Federal Research and Development Centers (FFRDCs):
For FFRDC partners, award recipient will provide a Field Work Proposal (if not already provided with the original application), along with the FFRDC labor mix and hours, by category and FFRDC major purchases greater than $25,000, including Quantity, Unit Cost, Basis of Cost, and Justification. The award recipient may allow the FFRDC to provide this information directly to DOE.

Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

Sub-Recipient Name/Organization	Purpose/Tasks in SOPO	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total
EXAMPLE ONLY!!! XYZ Corp.					
	REDACTED EXEMPTION 4				

Sub-Recipient Name/Organization	Purpose/Tasks in SOPO	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total
	REDACTED EXEMPTION 4				
	Sub-total				

Vendor Name/Organization	Product or Service, Purpose/Need and Basis of Cost (Provide additional support at bottom of page as needed)	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total
EXAMPLE ONLY!!! ABC Corp.					
	REDACTED EXEMPTION 4				

FFRDC Name/Organization	Purpose	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Project Total
	REDACTED EXEMPTION 4				

Total Contractual		

AdditionalExplanations/Comments (as necessary)

g. Construction

PLEASE READ!!!

Construction, for the purpose of budgeting, is defined as all types of work done on a particular building, including erecting, altering, or remodeling. Construction conducted by the award recipient is entered on this page. Any construction work that is performed by a vendor or subrecipient to the award recipient should be entered under f. Contractual.

List all proposed construction below, providing a basis of cost such as engineering estimates, prior construction, etc., and briefly justify its need as it applies to the Statement of Project Objectives.

Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

Overall description of construction actiivities:

Example Only!!! - Build wind turbine platform

General Description	Cost	Basis of Cost	Justification of need
Budget Period 1			
Three days of excavation for platform site EXAMPLE ONLY!!!			
		REDACTED EXEMPTION 4	
Budget Period 1 Total			
Budget Period 2			
		REDACTED EXEMPTION 4	
Budget Period 2 Total			

General Description	Cost	Basis of Cost	Justification of need
Budget Period 3			
REDACTED EXEMPTION 4			
Budget Period 3 Total			
PROJECT TOTAL			

Additional Explanations/Comments (as necessary)

h. Other Direct Costs

PLEASE READ!!!

Other direct costs are direct cost items required for the project which do not fit clearly into other categories, and are not included in the indirect pool for which the indirect rate is being applied to this project. Examples are meeting costs, postage, couriers or express mail, telephone/fax costs, printing costs, etc.

Basis of cost are items such as vendor quotes, prior purchases of similar or like items, published price list, etc.

Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

General description	Cost	Basis of Cost	Justification of need
Budget Period 1			
EXAMPLE ONLY!!! Grad student tuition	$16,000	Established UCD costs	Support of graduate students working on project
		REDACTED EXEMPTION 4	
Budget Period 1 Total			
Budget Period 2			
		REDACTED EXEMPTION 4	
Budget Period 2 Total			
Budget Period 3			
		REDACTED EXEMPTION 4	
Budget Period 3 Total			
PROJECT TOTAL			

Additional Explanations/Comments (as necessary)

i. Indirect Costs

	Budget Period 1	Budget Period 2	Budget Period 3	Total
Rate applied:				
Total indirect costs requested:		REDACTED EXEMPTION 4		

A federally approved indirect rate agreement, or rate proposed supported and agreed upon by DOE for estimating purposes is required if reimbursement of fringe benfits is requested. Please check (X) one of the options below and provide the requested information if it has not already been provided as requested, or has changed. Calculate the indirect rate dollars and enter the total in the Section B., line 6.j. (Indirect Charges) of form SF 424A.

____ **There is a federally approved indirect rate agreement. A copy is provided with this application and will be provided electronically to the Contracting Officer for this project.**
(When this option is selected, a presentation of the budget that demonstrates the application of the approved rate, to arrive at the proposed indirect charges proposed should also be provided.)

X **There is no current, federally-approved indirect rate agreement.**
(When this option is checked, the entity preparing this form shall submit an indirect cost rate proposal in the format provided at the following website, or in a format that provides the same level of information and which supports the rate(s) being proposed for use in estimating the project. Go to https://www.eere-pmc.energy.gov/forms.aspx and select PMC 400.2 Sample Rate Proposal.)

Additional Explanations/Comments (as necessary)

REDACTED
EXEMPTION 4

Cost Share

PLEASE READ!!!

A detailed presentation of the cash or cash value of all cost share proposed for the project must be provided in the table below. Identify the source & amount of each item of cost share proposed by the award recipient and each sub-recipient or vendor. Letters of committment must be submitted for all third party cost share (other than award recipient).

Note that "cost-share" is not limited to cash investment. Other items that may be assigned value in a budget as incurred as part of the project budget and necessary to performance of the project, may be considered as cost share, such as: contribution of services or property; donated, purchased or existing equipment; buildings or land; donated, purchased or existing supplies; and/or unrecovered personnel, fringe benefits and indirect costs, etc. For each cost share contribution identified as other than cash, identify the item and describe how the value of the cost share contribution was calculated.

Funds from other Federal sources MAY NOT be counted as cost share. This prohibition includes FFRDC sub-recipients. Non-Federal sources include private, state or local Government, or any source not originally derived from Federal funds. Documentation of cost sharing commitments must be provided, if not already provided with the original application and they have not changed since its submission.

Fee or profit will not be paid to the award recipients or subrecipients of financial assistance awards. Additionally, foregone fee or profit by the applicant shall not be considered cost sharing under any resulting award. Reimbursement of actual costs will only include those costs that are allowable and allocable to the project as determined in accordance with the applicable cost principles prescribed in 10 CFR 600.127, 10 CFR 600.222 or 10 CFR 600.317. Also see 10 CFR 600.318 relative to profit or fee.

Add rows as needed. If rows are added, formulas/calculations may need to be adjusted by the preparer.

Organization/Source	Type (cash or other)	Cost Share Item	Budget Period 1 Cost Share	Budget Period 2 Cost Share	Budget Period 3 Cost Share	Total Project Cost Share
ABC Company **EXAMPLE ONLY!!!**	[redacted]	[redacted] REDACTED EXEMPTION 4				

Organization/Source	Type (cash or other)	Cost Share Item	Budget Period 1 Cost Share	Budget Period 2 Cost Share	Budget Period 3 Cost Share	Total Project Cost Share
		REDACTED EXEMPTION 4				
		Totals				

Total Project Cost:

Cost Share Percent of Award:

Additional Explanations/Comments (as necessary)

REDACTED
EXEMPTION 4

Applicant Name: BlueFire Ethanol Fuels, Inc. (sub-recipient) Award Number: DE-FOA-0000096

Budget Information - Non Construction Programs

OMB Approval No. 0348-0044

Section A - Budget Summary

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. 81.087				$1,112,000		
2.						
3.					REDACTED EXEMPTION 4	
4.						
5. Totals		$0		$1,112,000		

Section B - Budget Categories

6. Object Class Categories	Grant Program, Function or Activity (1)	(2)	(3)	(4)	Total (5)
a. Personnel					
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual					
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	$				
j. Indirect Charges					
k. **Totals** (sum of 6i-6j)	$				
7. Program Income					

REDACTED EXEMPTION 4

Section C - Non-Federal Resources

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) **Totals**
8. DE-FOA-0000096				
9.				
10.		REDACTED EXEMPTION 4		
11.				
12. **Total** (sum of lines 8 - 11)				

Section D - Forecasted Cash Needs

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th quarter
13. Federal	$444,800	$111,200	$111,200	$111,200	$111,200
14. Non-Federal					
15. **Total** (sum of lines 13 and 14)			REDACTED EXEMPTION 4		

Section E - Budget Estimates of Federal Funds Needed for Balance of the Project

	Future Funding Periods (Years)			
(a) Grant Program	(b) First	(c) Second	(d) Third	(e) Fourth
16. DE-FOA-0000096				
17.				
18.		REDACTED EXEMPTION 4		
19.				
20. **Total** (sum of lines 16-19)				

Section F - Other Budget Information

21. Direct Charges

23. Remarks

PMC123.1 - Budget Justification for SF 424A Budget

Instructions and Summary

Award Number: DE-FOA-0000096
Award Recipient: Bluefire (sub-recipient)

Date of Submission: 12/29/2009
Form submitted by: Solazyme
(May be award recipient or sub-recipient)

Please read the instructions on each page before starting.
If you have any questions, please ask your DOE contact. It will save you time!

On this form, provide detailed support for the estimated project costs identified on the SF-424A form (Budget).

- The dollar amounts on this page must match the amounts on the associated SF-424A.
- The award recipient and each sub-recipient with est

SUMMARY OF BUDGET CATEGORY COSTS PROPOSED
(Note: The values in this summary table are from entries made in each budget category sheet.)

CATEGORY	Budget Period 1 Costs	Budget Period 2 Costs	Budget Period 3 Costs	Total Costs	Project Costs %	Comments (Add comments as needed)
a. Personnel						
b. Fringe Benefits						
c. Travel						
d. Equipment						
e. Supplies						
f. Contractual						
Sub-recipient						
FFRDC						
Vendor						
Total Contractual						
g. Construction						
h. Other Direct Costs						
i. Indirect Charges						
Total Project Costs						

REDACTED
EXEMPTION 4

Additional Explanations/Comments (as necessary)

REDACTED

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REDACTED

FOIA EXEMPTION 4

REDACTED

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