

Contact

www.linkedin.com/in/kim-aeling-a9737a11 (LinkedIn)

Top Skills

Scientific Writing

Liquid Handling

GoldenGate

Honors-Awards

2016 Presidential Green Chemistry Challenge Award

2003-2007 NLM Training Fellowship in Biomedical Informatics (NIH T15 LM-07443)

Publications

Co-fermentation of xylose and cellobiose by an engineered *Saccharomyces cerevisiae*.

DNA deformation energy as an indirect recognition mechanism in protein-DNA interactions.

A vector set for systematic metabolic engineering in *Saccharomyces cerevisiae*.

Indirect recognition in sequence-specific DNA binding by *Escherichia coli* integration host factor: the role of DNA deformation energy.

Activation of transcription initiation from a stable RNA promoter by a Fis protein-mediated DNA structural transmission mechanism.

Patents

Biological methods for preparing terpenes

Kim Aeling

Strain development

San Francisco Bay Area

Summary

Synthetic biologist with over 15 years of industrial experience in the production of renewable fuels and chemicals. A motivated project leader with a proven track record of meeting aggressive goals and timelines.

Experience

Zymergen, Inc.

R&D Director Strain Development

July 2018 - December 2022 (4 years 6 months)

R&D Director – July 2021 – Dec 2022

Associate Director – July 2018 – June 2021

Zymergen, Inc.

- Provide leadership and scientific guidance to scientists and RAs who work on various projects in the areas of synthetic biology, protein production, molecular biology tools, genetic engineering, microbiology and metabolic engineering and related fields.
- Ensure the quality of technical work through appropriate oversight for each individual and level.
- Provide leadership and decision-making guidance throughout the planning, execution, and implementation of strategic and technically focused initiatives to improve development projects and technical processes.
- Ensure clear communication with project technical leaders regarding the status of execution against activities and goals.
- Drive growth of the team by working with recruiting to ensure we meet hiring targets of by sourcing talented candidates, reviewing CVs, conducting interviews, hiring and mentoring career growth of reports.
- Establish supporting practices, tools, and documentation, and identify dependencies needed for technical workflows across the portfolio.
- Identify resourcing needs and contribute to decision making around portfolio level resource allocations with leadership and stakeholders.
- Scope new initiatives and projects with internal groups and external clients.
- Mentored 11 direct reports and 14 skip levels.

Verdezyne, Inc.

Senior Scientist

November 2009 - May 2018 (8 years 7 months)

Senior Scientist 6/2012- 5/2018

Verdezyne, Inc.

- Managed team of 6 strain engineers for the production of carotenoids. Collaborated closely with analytical, fermentation, downstream processing, business development, and regulatory. 4/2016- 5/2018.
- Identified optimal heterologous enzymes for the production of carotenoids; identified limiting reactions in host strains and overexpressed inducible genes to compensate; identified media formulations for enhanced production; monitored cell physiology during production for downstream processing concerns.
- Explored host cell genome and expression levels via traditional lab techniques and high throughput sequencing (PacBio and Illumina).
- Developed a novel means of integrating multiple copies of genes at once using auxotrophic or antifungal selection. This method was integral in obtaining a 10x improvement over a 2 month development time period.
- Managed team of 4 strain engineers for the production of ODDA 2015-2016.
- Characterized elongases, fatty acid desaturases, fatty acyl-CoA synthetases, thioesterases, acyl-CoA oxidases/dehydrogenases, and enoyl-coA isomerases for the optimal production of short, medium, and long-chain diacids.
- Collaborated in multiple teams of strain engineers for the production of sebacic acid, suberic acid, adipic acid, and DDDA.
- Mentored 5 direct reports.

Scientist 2009 – 2012

Verdezyne, Inc.

- Integrated novel metabolic pathways into *S. cerevisiae* in order to enhance ethanol production.
- Identified enzymes for introduction of a heterologous Entner–Doudoroff pathway with high activity levels in *S. cerevisiae*.
- Identified and characterized novel constitutive and inducible promoters and novel intergenic integration sites.
- Designed, constructed, and characterized mutant proteins including xylose isomerase and ZWF1 with desired properties.
- Improved protein expression and solubility.
- Optimized in vitro activity assays for multiple enzymes.

UC Irvine

Postdoctoral researcher

June 2007 - October 2009 (2 years 5 months)

Irvine, CA

Postdoctoral Researcher 2007 – 2009

Institute for Genomics and Bioinformatics, University of California, Irvine,
Computational Biology Research Laboratory (CBRL).

- Assembled and cloned genes created via a computationally optimized DNA assembly technique.
- Expressed proteins from a variety of organisms involved in the metabolism of xylose and arabinose in *S. cerevisiae*.
- Designed and characterized mutant xylose reductases and xylitol dehydrogenases with new desired properties.
- Purified and biochemically analyzed yeast-expressed his-tagged proteins.

Education

UC Irvine

Ph.D., Biological Sciences · (2002 - 2007)