

Aditya M. Kunjapur

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Objective: Seeking a post-doctoral fellowship that begins in ~09/2015 and emphasizes genome editing/assembly

Education

- 09/10 – Present **Ph.D. Candidate, Chemical Engineering**
Massachusetts Institute of Technology
Advisor: Dr. Kristala L. J. Prather
Expertise: Metabolic engineering and synthetic biology
Thesis: Microbial engineering for aldehyde synthesis
Current Cumulative GPA: 4.8/5.0
Expected Completion Date: 06/2015
- 08/06 – 05/10 **Bachelor of Science, Chemical Engineering**
Cockrell School of Engineering, University of Texas at Austin
Minor: Business Foundations (MAN, MKT, FIN, LEB, ACC, MIS, ECO, SDS)
Cumulative GPA: 4.0/4.0

Professional Experience

- 01/13 – 07/13 **Intern Associate, Terawatt Ventures** (volunteered 5 hrs/wk)
Scouted 100+ start-ups in renewable energy and agtech sectors for new deal sourcing
- 06/10 – 08/10 **Stimulation Research Intern, Shell Upstream Americas**
Developed approximate fluid salinity guidelines for hydraulic fracturing of shale formations
- 05/09 – 08/09 **Production Engineering Intern, Shell Exploration and Production Company (Shell E&P)**
Simulated production gains from implementing gas lift or alternatives for Auger/Mars platforms
- 05/08 – 08/08 **Facilities/Projects Engineering Intern, ExxonMobil Production Company**
Prepared cost/schedule estimates for instrument gas dehydration and compressor upgrade
- 06/07 – 08/07, 06/06 – 08/06 **Production/Reservoir Engineering Intern, Shell E&P (2 summers)**
Estimated gas reserves and developed economic justification for \$350,000+ in well remediation

Teaching Experience

- 02/13 – 05/13 **Teaching Assistant, MIT Chemical Engineering Department** (30 hrs/wk)
Served as a teaching assistant for the graduate “Kinetics and Reactor Design” course requirement
- 07/12 – 08/12, 07/11 – 08/11 **Co-teacher, “Microbial Chemical Factories”, MIT Educational Studies Program** (5 hrs/wk)
Designed a curriculum and co-taught high school students for seven weeks during each summer
- 08/11, 08/12 **Teaching Assistant, “Fermentation Tech.” & “Downstream Processing”, MIT Short Courses**
Served as a teaching assistant for two one-week courses tailored for biotechnology professionals
- 09/09 – 12/09 **Teaching Assistant / Research Assistant, Chemical Engineering, Univ. of Texas** (16 hrs/wk)
Planned and led weekly recitations/office hours for “Material and Energy Balances” intro course
Independently planned and performed experiments seeking to isolate sucrose from cyanobacteria
- 09/08 – 05/09 **Tutor and Grader, Chemical Engineering, Univ. of Texas** (9 hrs/wk)
Appointed as grader and tutor for “Transport Phenomena” during fall and spring semesters

Awards

MIT Representative for AIChE Workshop on Entrepreneurship & Creativity - 2014
BIOPRO World Talent Campus Participant (1 of 18 international Ph.D. students) - 2013
National Science Foundation Graduate Research Fellowship – 2010
Chevron-MIT Energy Initiative Fellowship – 2010
National Tau Beta Pi Williams Fellowship – 2010
University of Texas Unrestricted Endowed Presidential Scholar - 2009
Shell Oil Company Technical Scholar - 2007
Micron Science and Technology Scholar - 2006
Texas Society of Professional Engineers Chapter and State Awards - 2006
Houston Museum of Natural Science Evelyn Frensey Award - 2005

Technical Skills

Expertise in molecular cloning in *E. coli*, metabolic pathway development, genome engineering in *E. coli*, protein purification, enzyme kinetics, qRT-PCR, biochemical kinetic modeling, *in silico* metabolic flux analysis, liquid/gas chromatography, bioreactor operation, and basic culturing/cloning of *S. cerevisiae*
Software proficiency in MATLAB, Origin, Adobe Illustrator, Aspen, and MS Excel/PP/Word

Recent Activities

Co-President, MIT Energy Club	Fall '13 – Spring '14
Co-President, Synthetic Biology ERC (SynBERC) Student Group	Spring '13 – Fall '13
Founder and Chair, BioEnergy Community, MIT Energy Club	Fall '12 – Spring '13
Graduate Student Council, Orientation Committee and Course X	Fall '11 – Summer '12
Planning Lead, Shale Gas Panel, MIT Energy Conference Team	Fall '11 – Spring '12
Elevator Pitch Winner, SynBERC	Fall '11

Publications

Khlystov, N.; Kunjapur, A. M.; Prather, K. L. J.; Olsen, B. D. " Material properties of the cyanobacterial reserve polymer multi-L-arginyl-poly-L-aspartate (cyanophycin)." In preparation.

Sheppard, M. J.[†]; Kunjapur, A. M.[†]; Prather, K. L. J. "Modular and selective biosynthesis of key gasoline-range alkanes." In preparation. [†]Contributed equally.

Kunjapur, A. M.; Prather, K. L. J. "Microbial engineering for aldehyde synthesis." Invited minireview for *Appl. Environ. Microbiol.* Submitted.

Sheppard, M. J.; Kunjapur, A. M.; Wenck, S. J.; Prather, K. L. J. "Retrobiosynthetic modular approach to pathway design achieves selective pathway for microbial synthesis of the gasoline substitute 4-methyl-pentanol." *Nat. Commun.* **2014** 5, 5031.

Kunjapur, A. M.; Tarasova, Y.; Prather, K. L. J. "Synthesis and accumulation of aromatic aldehydes in an engineered strain of *E. coli*." *J. Am. Chem. Soc.* **2014** 136 (33), 11644-11654. (Highlighted in C&EN)

Kunjapur, A. M.; Eldridge, R. B. "Photobioreactor design for commercial biofuel production from microalgae." *Ind. Eng. Chem. Res.* **2010** 49 (8), 3516-3526.

Patents

Sheppard, M. J.; Kunjapur, A. M.; Prather, K. L. J. "Microbial production of branched medium chain alcohols, such as 4-methylpentanol." US Provisional Application No. 61/899,129.

Presentations

(Upcoming) Kunjapur, A.M., *et. al.* “Synthesis and accumulation of aromatic and aliphatic aldehydes in an engineered strain of *E. coli*.” November 19, 2014. 2014 American Institute of Chemical Engineers (AIChE) Annual Meeting. Generously supported by a travel grant from the MIT Graduate Student Council.

Kunjapur, A.M. “Chassis engineering for aldehyde synthesis.” September 27, 2014. Synthetic Biology Engineering Research Center 2014 Fall Retreat. Oral presentation award recipient.

Kunjapur, A.M., *et. al.* “Synthesis and accumulation of aromatic aldehydes in an engineered strain of *E. coli*.” March 19, 2014. Oral presentation at the 247th American Chemical Society (ACS) National Meeting and Exposition. Generously supported by a travel grant from the Dow Chemical Company.

Citizenship Status: US Citizen