

EDUCATION	<b>Princeton University</b> , NJ, USA	2012-17
	Ph.D., Chemical and Biological Engineering Thesis: Quantitative biology of developmental Ras signaling Advisors: Stanislav Y. Shvartsman and Gertrud M. Schüpbach	
	<b>Indian Institute of Technology (IIT) Gandhinagar</b> , GJ, India	2008-12
	B.Tech. (Honors), Chemical Engineering	
RESEARCH EXPERIENCE	<b>Research Assistant</b> , Princeton University, USA	2013-17
	Developed novel quantitative frameworks to study signaling networks in the context of <i>Drosophila</i> development and diseases.	
	<b>Research Intern</b> , Genentech, USA	2016
	Assisted in identifying unique regulatory mechanisms underlying the epigenetic control of tumorigenesis in cancer cells.	
	<b>Research Intern</b> , Washington University in St. Louis, USA	2010
	Developed a data-driven regression model to predict the metabolic yield for various microbial species.	
	<b>Research Intern</b> , IIT Bombay, India	2009
	Performed experiments and quality control tests to produce biodiesel from various feed-stocks.	
AWARDS	<b>Graduate</b>	
	Sir Gordon Wu Fellowship: Highest honor for an incoming graduate student, School of Engineering and Applied Sciences, Princeton University	2012-17
	William R. Schowalter Travel Fund, Princeton University	2015, 2017
	Peoples Choice Award, Art of Science, Princeton University	2014
	<b>Undergraduate</b>	
	Institute Gold Medal: First rank, Chemical Engineering, IIT Gandhinagar	2012
	Outstanding Research Award: Class of 2012, IIT Gandhinagar	2012
	Award for Undergraduate Publications, IIT Gandhinagar	2012
	Meritorious Scholarship for Academic Excellence, IIT Gandhinagar	2011-12
	International Travel Grant, DST, Government of India	2011
	Merit-cum-Means Scholarship, IIT Gandhinagar	2010-11
	MAGEEP Fellowship, Washington University in St. Louis	2010
JOURNAL PUBLICATIONS	Total: 15; first/co-first author: 10	[*equal contribution]
	*Jindal G.A., * <b>Goyal Y.</b> , Humphreys J.M., Yeung E., Tian K., Patterson V.L., He H., Burdine R.D., Goldsmith E.J., Shvartsman S.Y., “How activating mutations affect MEK1 regulation and function”, <u>Journal of Biological Chemistry</u> , 2017.	
	Cuellar T. L., Herzner A-M., Zhang X., <b>Goyal Y.</b> , Watanabe C., et. al., “Silencing of retrotransposons by SETDB1 inhibits the interferon response in acute myeloid leukemia”, <u>Journal of Cell Biology</u> , 2017.	
	<i>Reviewed by:</i> Robbez M.L., Tie H.C., and Rowe H.M., <u>Journal of Cell Biology</u> , 2017.	

**\*Goyal Y.**, \*Levario T.J., Mattingly H.H., Holmes S., Shvartsman S.Y., and Lu H., “Parallel imaging of *Drosophila* embryos for quantitative analysis of genetic perturbations of the Ras pathway”, Disease Models & Mechanisms, 2017.

*Highlighted by:* The Node.

\*Rogers W.A., **\*Goyal Y.**, Yamaya K., Shvartsman S.Y., and Levine M.S., “Uncoupling neurogenic gene networks in the *Drosophila* embryo”, Genes & Development, 2017.

*Previewed by:* Crews S., Genes & Development, 2017.

**\*Goyal Y.**, \*Jindal G.A., Pelliccia J.L., Yamaya K., Yeung E., Futran A.S., Burdine R.D., Schüpbach T., and Shvartsman S.Y., “Divergent effects of intrinsically active MEK variants on developmental Ras signaling”, Nature Genetics, 2017.

*Highlighted by:* F1000Prime.

*Media coverage:* MedicalXpress, EurekAlert, Technology Org, Medical News.

\*Jindal G.A., **\*Goyal Y.**, Yamaya K., Futran A.S., Kountouridis J., Schüpbach T., Burdine R.D., and Shvartsman S.Y., “In vivo severity ranking of Ras pathway mutations associated with developmental disorders”, PNAS, 2017.

\*Johnson H.E., **\*Goyal Y.**, Pannucci N., Schüpbach T., Shvartsman S.Y., and Toettcher J.E., “The spatiotemporal limits of developmental Erk signaling”, Developmental Cell, 2017.

*Journal cover:* January 23, 2017 issue.

*Previewed by:* Shilo B. and Barkai N., Developmental Cell, 2017.

*Highlighted by:* F1000Prime.

\*Jindal G.A., **\*Goyal Y.**, Burdine R.D., Rauen K.A., and Shvartsman S.Y., “Rasopathies: unraveling mechanisms with animal models”, Disease Models & Mechanisms, 2015.

Jenni S., **Goyal Y.**, Grotthuss M.V., Shvartsman S.Y., and Klein D.E., “Structural basis of neurohormone perception by the receptor tyrosine kinase torso”, Molecular Cell, 2015.

**Goyal Y.**, Kumar M., and Gayen K., “Metabolic engineering for enhanced hydrogen production: a review”, Canadian Journal of Microbiology, 2013.

Kumar M., **Goyal Y.**, Sarkar A., and Gayen K., “Comparative economic assessment of ABE fermentation based on cellulosic and non-cellulosic feedstocks”, Applied Energy, 2012

\*Colletti P. F., **\*Goyal Y.**, Varman A. M., Feng X., Wu B., and Tang Y.J., “Evaluating factors that influence microbial synthesis yields by linear regression with numerical and ordinal variables”, Biotechnology and Bioengineering, 2011.

*Highlighted by:* Two year metabolic engineering issue, Biotechnology and Bioengineering.

Sahu M., Wu B., Zhu L., Jacobson C., Wang W., Jones K., **Goyal Y.**, Tang Y.J., Biswas P., “Role of dopant concentration, crystal phase, and particle size on microbial inactivation of Cu-doped TiO<sub>2</sub> nanoparticles”, Nanotechnology, 2011.

MANUSCRIPTS IN  
PREPARATION

**Goyal Y.**, Schüpbach T., Shvartsman S.Y., “A quantitative model of developmental Erk signaling”.

Paul S., Yang L., Mattingly H.H., **Goyal Y.**, Shvartsman S.Y., Veraksa A., “Activation-induced substrate engagement in Erk signaling”.

TALKS	Developmental Biology, Stanford University, USA	2017
	Chemical Engineering, Indian Institute of Science Bangalore, India	2017
	Mathematical Institute, University of Oxford, UK	2017
	Molecular Biosciences, Imperial College London, UK	2017
	AIChE Annual Meeting, USA	2016
	Discovery Oncology, Genentech, USA	2016
	Molecular Biology, Genentech, USA	2016
	Biophysics, UT Southwestern Medical Centre, USA	2016
	Developmental Colloquium, Princeton University, USA	2016
	Graduate Student Symposium, Princeton University, USA	2015
64 <sup>th</sup> Annual IChE meeting, India	2011	
POSTER PRESENTATIONS	Bioengineering Day <sup>‡</sup> , Princeton University, USA	2015
	4 <sup>th</sup> International RASopathies Symposium, USA	2015
	56 <sup>th</sup> Annual <i>Drosophila</i> Research Conference, USA	2015
	111 <sup>th</sup> American Society for Microbiology General Meeting, USA	2011
	[ <sup>‡</sup> best poster award]	
UNDERGRADUATE MENTORING	Kaijia Tian <sup>†</sup> , Chemical Engineering, Princeton University	2016-17
	Kei Yamaya, Molecular Biology, Princeton University	2015-17
	Natalia Chen, Electrical Engineering, Princeton University	2015
	An Chu, Chemistry, Princeton University	2014-15
	Nalin Ratnayeke, Physics and Biology, UT Austin	2014
	[ <sup>†</sup> best thesis award]	
TEACHING EXPERIENCE	<b>Teaching Assistant</b> , Princeton University, USA	
	MAT/MAE 305: Mathematics in Engineering-I Instructor: Yannis G. Kevrekidis	2014
	<b>Teaching Assistant</b> , IIT Gandhinagar, India	
	CL 207: Chemical Process Calculations Instructor: S.L. Narayanamurthy	2009
	MA 102: Linear Algebra Instructor: Devidas Pai	2009
	MA 104: Ordinary Differential Equations Instructor: Devidas Pai	2009
AFFILIATIONS	Reviewer, Biophysical Journal, Cell press	2014-present
	Reviewer, Development, The company of biologists	2016-present
	Student Member, American Institute of Chemical Engineers (AIChE)	2016-17
	Student Member, Genetic Society of America (GSA)	2015-16
	Institute Nominee Member, American Mathematical Society (AMS)	2011-13
MEDIA COVERAGE	Studies point way to precision therapies for common class of genetic disorders	2017
	Fusion of multiple disciplines on display at Bioengineering Day	2015
	Who Knew Fungi and Fruit Fly Ovaries Could Be So Beautiful?	2014
	Students to turn IIT-GN campus eco-friendly	2009
	APS wins national quiz competition	2006