Saurin Bipin Parikh

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Summary

Physician-scientist with expertise in leveraging systems and computational approaches to enhance our collective understanding of cell biology. Passionate about utilizing data-centric solutions to drive the development of diagnostic and therapeutic tools for improving human health.

Nationality: Indian | Visa Sponsorship: Required

Education

University of Pittsburgh School of Medicine — *Pittsburgh, PA, USA*
PhD in Integrative Systems Biology — *August 2018 – Present*

University of Pittsburgh Swanson School of Engineering — *Pittsburgh, PA, USA*
MS in Bioengineering — *August 2016 – April 2018*

Gujarat University — *Ahmedabad, Gujarat, India*
MBBS [MD equivalent] — *July 2008 – June 2014*

Experience

Carvunis Lab — *Pittsburgh, PA, USA*
Graduate Student Researcher — *August 2017 – Present*

- Built the LI Detector experimental and analytical framework that expands the power and applicability of high-throughput phenotyping by eliminating the need for a priori statistical assumptions. [PDF, GitHub]
- Utilized the power of structural and evolutionary modeling, *in vitro* kinetic assays, genetic manipulation and complementation to characterize a previously unknown enzyme that challenges long-standing assumptions in yeast genetics, physiology and metabolism. [PDF]
- Characterized a representative set of evolutionarily novel genetic elements using genomics, phenomics and proteomics. [PDF, unpublished]

Coulter Translational Research Partners II Program — *Pittsburgh, PA, USA*
Technology Fellow — *January 2017 – June 2017*

- Identified, developed, and commercialized projects that address unmet clinical needs undertaken by bioengineers and clinical faculty within the University of Pittsburgh.
- Performed stakeholder discovery, intellectual property analysis, reimbursement strategy analysis, clinical trial design and business plan development.

Parth Hospital — *Ahmedabad, Gujarat, India*
Junior Surgeon — *January 2015 – June 2016*

- Responsible for all stages of patient care and counselling. Independently performed minor surgeries and procedures.

Sample Projects

dementiaC Proof-of-concept ML classifier to identify patients with early-stage dementia using MRI data. [Report]
rnaseekeR Nextflow + Docker + R toolkit for RNA-seq analysis from fasta files to differential expression. [GitHub]
growthcurveR Docker + R toolkit for analyzing microplate reader data for microbial growth. [GitHub]
gas_sensor A flexible Arduino-based gas sensor for rapid prototyping and experimentation. [GitHub]

Skills

Programming	• Data management, data analytics, machine learning, data visualization, workflow management • MATLAB, R, Python, Bash, SLURM, SQL, Nextflow, Docker
Subject Expertise	Human health, computational & systems biology, genomics, phenomics, product development
Applications	Git, AWS/Cloud computing platforms, Linux/Unix, common spreadsheet & presentation software

Publications

Wacholder, A., **Parikh, S. B.**, Coelho, N. C., Acar, O., Houghton, C., Chou, L., & Carvunis, A.-R. (2023). A vast evolutionarily transient translatome contributes to phenotype and fitness. *Cell Systems*, *14*(5), 363–381.e8. https://doi.org/10.1016/j.cels.2023.04.002

Parikh, S. B.*, Van Oss, S. B.*, Castilho Coelho, N.*, Wacholder, A., Belashov, I., Zdancewicz, S., Michaca, M., Xu, J., Kang,Y. P., Ward, N. P., Yoon, S. J., McCourt, K. M., McKee, J., Ideker, T., VanDemark, A. P., DeNicola, G. M., & Carvunis, A.-R. (2022). On the illusion of auxotrophy: met15Δ yeast cells can grow on inorganic sulfur thanks to the previously uncharacterized homocysteine synthase Yll058w. Journal of Biological Chemistry, 298(12), 102697. https://doi.org/10.1016/j.jbc.2022.102697
*these authors contributed equally

Parikh, S. B., Houghton, C., Van Oss, S. B., Wacholder, A., & Carvunis, A.-R. (2022). Origins, evolution, and physiological implications of de novo genes in yeast. Yeast, 39(9), 471–481. https://doi.org/10.1002/yea.3810

Parikh, S. B., Castilho Coelho, N., & Carvunis, A.-R. (2021). LI Detector: a framework for sensitive colony-based screens regardless of the distribution of fitness effects. G3, 11(2). https://doi.org/10.1093/g3journal/jkaa068

Vakirlis, N., Acar, O., Hsu, B., Castilho Coelho, N., Van Oss, S. B., Wacholder, A., Medetgul-Ernar, K., Bowman, R. W., 2nd, Hines, C. P., Iannotta, J., **Parikh, S. B.**, McLysaght, A., Camacho, C. J., O'Donnell, A. F., Ideker, T., & Carvunis, A.-R. (2020). De novo emergence of adaptive membrane proteins from thymine-rich genomic sequences. Nature Communications, 11(1), 781. https://doi.org/10.1038/s41467-020-14500-z

Widdowson, C., Ganhotra, J., Faizal, M., Wilko, M., **Parikh, S.**, Adhami, Z., & Hernandez, M. E. (2016). Virtual reality applications in assessing the effect of anxiety on sensorimotor integration in human postural control. 2016 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), 33–36. https://doi.org/10.1109/EMBC.2016.7590633

Additional Information

Licenses and Certifications	Medical License and Registration Registration No. G-52091, Gujarat Medical Council, India	*June 2014 – Present*
Awards	• Travel Award, Biomedical Graduate Student Association (BGSA), University of Pittsburgh	*September 2019*
	• Randall Family Big Idea Competition – Third Place, Innovation Institute, University of Pittsburgh	*March 2017*
	• StartUp Blitz – Finalist, Innovation Institute, University of Pittsburgh	*January 2017*
Committee Involvement	• Integrative Systems Biology (ISB) Program Admissions Committee	*August 2020 – April 2021*
	• Integrative Systems Biology (ISB) Program Representative at Biomedical Graduate Student Association (BGSA)	*August 2019 – July 2020*