

BIOGRAPHICAL SKETCH

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NAME: Chaudhary, Sunita (formerly Sunita Ranjhan)

eRA COMMONS USER NAME (credential, e.g., agency login): CHAUDHS

POSITION TITLE: Associate Professor; Director, Research Education

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Delhi, Delhi, India	BS	05/1983	Botany
University of Philippines, Los Banos, Philippines	MS	05/1986	Genetics
University of California, Davis, California, USA	PhD	05/1991	Genetics
Laboratoire de Genetique Moleculaire des Eukaryotes, Strasbourg, France	Post-doctoral fellowship	08/1993	Molecular Biology
Ciba-Giegy/Novartis, Research Triangle Park, North Carolina, USA	Post-doctoral fellowship	05/1995	Molecular Biology

A. Personal Statement

I started my professional career with solid scientific research training in academia as well as industry and transitioned into biomedical research education and training. As Director of Research Education at Rutgers Cancer Institute of New Jersey, and Associate Professor, Surgical Oncology, Rutgers Robert Wood Johnson Medical School (RWJMS), I am now responsible for developing, implementing, and evaluating multidisciplinary training programs, courses, seminar series, and continuing education programs. I have developed and teach the *Basics of Cancer Biology* course for high school and undergraduate students, as well as *Essentials of Investigator Initiated Clinical Research* course for clinical fellows, and clinical research staff at Rutgers Cancer Institute since 2004 (course co-taught with other faculty). I teach scientific writing and presentation skills to students, as well as post-doctoral fellows. My teaching responsibilities also include the *Molecular Medicine Seminar* course for graduate students at RWJMS-Graduate School of Biomedical Sciences (course co-taught with other faculty). I organize and serve as Program Chair of Planning & Review Committee of the Annual Retreat on Cancer Research in New Jersey. Over 400 cancer researchers attend this conference across the tri-state area of New Jersey, Pennsylvania, and New York with over 150 poster and podium presentations. I have served as a reviewer for individual training grants (F series) and R36 for NIH, and as a Team Member to review grants and portfolio of the New Jersey Bio-1 Workforce Initiative in Regional Economic Development (WIRED) program, with a goal to excite young, minority individuals about bioscience careers. In my prior position as Associate Director of the Baylor K30 program, I played a key role in developing and implementing the curriculum for the Baylor Clinical Scientist Training Program (CSTP), guiding fellows and junior faculty, and establishing inter-institutional affiliations and program policies. I am passionate about increasing diversity in the biomedical workforce. Towards this end, I have developed training programs in translational cancer research at Rutgers Cancer Institute including Rutgers Youth Enjoy Science program (previously Continuing Umbrella of Research Experience [CURE]) for under-represented minority high school, undergraduate students and teachers, and secured funding for these programs from NCI and philanthropic sources (as PI). The CURE program has trained over 100 youth from underrepresented groups in the past decade with excellent outcomes (100% of high school students in college and 91% of undergraduates pursuing graduate studies at top-tier Universities including Cornell, University of Pennsylvania, and Harvard, etc.). In summary, I have the background in scientific research and a record of accomplishment in successfully developing, implementing, and evaluating research-training programs that have impactful outcomes.

Ongoing and recently completed projects that I would like to highlight include:

NCI 1R25CA247785-02
Chaudhary (PI)
09/01/2020 – 08/31/2025
Rutgers Youth Enjoy Science

NCI 3R25CA247785-02S1
Chaudhary (PI)
09/01/2021 – 11/30/2022
Rutgers Youth Enjoy Science - DE&I Supplemental

NCI 1T32CA257957-01
Zong/Kang (PIs); Role: Program Evaluator, Program
Executive Director
04/01/2021-03/31/2026
Post-doctoral Training Program in Cancer Metabolism and Tumor-host Interactions

NCI 3P30 CA072720-20
Libutti (PI); Role: Director, Research
Education 03/01/2019-02/29/2024
Cancer Center Support Grant

Bristol-Myers Squibb
Chaudhary (PI)
05/01/2019-06/30/2020
Clinical Research Experience for High School Students

NIH 1DP7OD020314-01
Millonig/Yarmush (PIs); Role: Program
Evaluator 10/01/2014-09/30/2019
Rutgers Interdisciplinary Job Opportunities for Biomedical Scientists (iJOBS)

The Edward W. and Stella C. Van Houten Memorial
Fund Chaudhary (PI)
01/01/2017-06/30/2019
Clinical Research Experience for High School Students

B. Positions, Scientific Appointments, and Honors

Positions and Scientific Appointments

2021 – Present	Associate Professor, Surgery, Robert Wood Johnson Medical School
2009 – 2021	Adjunct Assistant Professor, Surgery, Robert Wood Johnson Medical School
2009 – 2010	Director, Centralized Education and Training Services, CINJ Shared Resource
2005 – 2009	Member, Centralized Education and Training Services, CINJ Operating Committee
2005 – Present	Member, Centralized Education and Training Services, CINJ Curriculum Committee
2002 – Present	Director, Research Education, CINJ, New Brunswick, New Jersey
2000 – 2002	Instructor, Pediatrics-Nutrition, Baylor College of Medicine, Houston, TX
2000 – 2002	Coordinator, Pediatric Endocrinology Fellowship Program, Baylor College of Medicine, Houston, TX
1999 – 2002	Associate Director, Clinical Scientist Training Program, Baylor College of Medicine, Children's Nutrition Research Center, Houston, TX
1997 – 1999	Sponsored Program Coordinator, Texas Children's Cancer Center, Baylor College

of Medicine, Houston, TX

1996 – 1997 Research Scientist, Ross Products Division, Abbott Laboratories, Columbus, OH

1995 – 1996 Research Scientist, James Cancer Center, Ohio State University, Columbus, OH

Honors

2013 – 2016 New York Academy of Sciences, Fellow, NeXXt Scholars Program

2010 Honorary Recognition, Office for Diversity & Academic Success in the Sciences (ODASIS), Rutgers, the State University of New Jersey

2002 Recognition for dedication and outstanding contribution to Baylor Clinical Scientist Training Program

1996 Ross Pediatrics Award of Excellence

1993 Fondation pour la Recherche Medicale, Paris fellowship

1992 ARC (Association Pour La Recherche Sur Le Cancer, Paris, France) fellowship

1991 University of Louis Pasteur (Strasbourg) Fellowship

1989 Citation for Outstanding Performance in PhD Qualifying Exams

1984 – 1986 International Rice Research Institute Fellowship

C. Contributions to Science

1. Use of Trisomic Analysis for isozyme gene location in *Oryza sativa* L.

During my M.Sc. at the International Rice Research Institute and University of Philippines, Los Banos, I made a significant contribution (as first author) towards mapping the genetic architecture of *Oryza sativa* L., using trisomic analysis. This study was the first demonstration of the use and efficiency of trisomic analysis for isozyme gene localization and assigned *Adh-1* to chromosome 11, *Est-8* to chromosome 7, *Sdh-1* to chromosome 6 and *Pgi-1* to chromosome

4. This contribution established the use of the trisomic analysis technique for localization of biochemical markers, which were superior to morphological markers that were in use by plant breeders for crop improvements and initiated several other mapping studies of isozyme loci using trisomics to establish a linkage map.

a. **Ranjhan, S.**, Glaszmann, J.C., Ramirez, D.A., and G.S., Khush. Chromosomal localization of four isozyme loci by trisomic analysis in rice (*Oryza sativa* L.). *Theoretical and Applied Genetics*, 1988, Vol. 75, 541-545.

2. Genomic Organization and Chromosomal localization of alpha-amylase genes in *Oryza Sativa* L.

During research for my PhD degree at University of California, Davis, I contributed (as first author) to the understanding of the genomic organization and chromosomal localization of the genes for α -amylase, alcohol dehydrogenase (*Adh-2*), and Em (an ABA-regulated gene expressed late in embryogenesis) on rice chromosomes by the analysis of primary trisomics and proposed a nomenclature for the rice α -amylase genes. The validity of the mapping approach was confirmed using *Adh-1* as a control. The *Adh-1* gene had been previously assigned to chromosome 11 using conventional techniques.

a. **Ranjhan, S.**, Litts, J.C., Foolad, M. R. and R.L., Rodriguez. Chromosomal localization and genomic organization of α -amylase genes in rice (*Oryza sativa* L.), *Theoretical and Applied Genetics*, 1991, Vol. 82, 481-488.

b. **Ranjhan, S.** Erik E. Karrer and R.L., Rodriguez. Localizing α -amylase gene expression in germinated rice grains. *Plant Cell Physiology*, 1992, 33 (1), 73-79.

c. Rodriguez, R.L., Huang, N., Sutliff, T., **Ranjhan, S.**, Karrer, S., Litts, J. C. Organization, Structure and Expression of the rice α -amylase multigene family. In: Proceedings of the 2nd International Rice Genetics Symposium, 1991, Island Publishing House Inc., Manila, Philippines.

3. Regulation of Eukaryotic Transcription

During my post-doctoral training at Laboratoire de Genetique Moleculaire des Eucaryotes du CNRS, Strasbourg, France, I contributed (as first author as well as part of a team) to the

understanding of eukaryotic gene regulation through identification of chromatographically distinct TBP-containing complexes which mediated the effect of different transcriptional activators and identification of negative regulatory factors that played a role in cell-specific gene expression. The TATA-binding protein (TBP)-associated factors (TAFs) of TFIID play a central role in RNA polymerase II mediated transcriptional regulation.

- a. Christel Brou*, **Sunita Chaudhary***, Irwin Davidson*, Yves Lutz, Jun Wu, Jean-Marc Egly, Laszlo Tora and Pierre Chambon. Distinct TFIID complexes mediate the effect of different transcriptional activators. *EMBO Journal*, 1993, Vol. 12 (2), 489-499. (*equal contributors)
- b. **Sunita Chaudhary**, Christel Brou, Irwin Davidson, Laszlo Tora and Pierre Chambon. The cell specificity of the TEF-1 activation in vitro domain is determined by negative regulatory factors. *Molecular and Cellular Biology*, 1994, Vol. 14 (8), 5290-5299.
- c. **Sunita Chaudhary**, Laszlo Tora and Irwin Davidson. Characterization of a HeLa cell factor which negatively regulates transcriptional activation in vitro by Transcriptional Enhancer Factor-1(TEF-1). *Journal of Biological Chemistry*, 1995, Vol. 270 (8), 3631- 3637.
- d. Tora, Laszlo, Christel Brou, Anne Kuhn, Adrien Staub, **Sunita Chaudhary**, Irwin Davidson and Ingrid Grummt. Sequence-specific transactivators counteract topoisomerase II mediated inhibition of in vitro transcription by RNA polymerase I and II. *Nucleic Acids Research*, 1993, Vol. 21, No. 17, 4011-4018.

4. Recombinant production of gamma-linolenic acid in *Saccharomyces cerevisiae*

As a research scientist at Ross Products Division, Abbott Laboratories I contributed (second author) as part of a team in cloning and overexpression of desaturases for the production of high levels of linoleic acid at levels up to 25% of the total fatty acids in yeast. When linoleic acid was provided as an exogenous substrate to the yeast cultures expressing the delta6-desaturase activity, the level of gamma-linolenic acid reached 10% of the total yeast fatty acids. Co- expression of both the delta6- and delta12-desaturase cDNA resulted in the endogenous production of gamma-linolenic acid. The yields of gamma-linolenic acid reached as high as 8% of total fatty acids in yeast. This work resulted in 12 approved patents (on which I am listed as an inventor) in addition to 3 publications.

- a. Huang Y.S., **Chaudhary S.**, Thurmond J.M., Bobik E.G. Jr., Yuan L., Chan G.M., Mukerji P., Knutzon D.S. Cloning of delta12- and delta6-desaturases from *Mortierella alpina* and recombinant production of gamma-linolenic acid in *Saccharomyces cerevisiae*. *Lipids*. 1999 Jul;34(7):649-59.
- b. Deborah S. Knutzon, Jennifer M. Thurmond, Yung-Sheng Huang, **Sunita Chaudhary**, Emil G. Bobik, Jr., George M. Chan, Stephen J. Kirchner, and Pradip Mukerji. Identification of delta-5 Desaturase from *Mortierella alpina* by heterologous expression in Bakers'Yeast and Canola. *Journal of Biological Chemistry*, 1998, 273 (45), 29360-29366.
- c. Methods and compositions for synthesis of long chain polyunsaturated fatty acids. US Patent 6,410, 288 B1, Date of Issue 06/25/2002, Inventors: Deborah Knutzon, Pradip Mukerji, Yung-sheng Huang, Jennifer Thurmond, **Sunita Chaudhary**.
- d. β -casein expressing constructs. US Patent 6,287,866, Date of Issue 9/11/2001; Inventors: Pradip Mukerji, Steven A. Lemmel, Amanda Eun-Yeong Leonard, **Sunita Chaudhary**.

5. Understanding Interventions that Encourage Minorities to Pursue Research Careers

Of particular relevance to the field of education are my contributions to educational research focusing on evaluating interventions that promote biomedical research career choice by minority youth. I am the PI of two IRB approved studies titled, "Evaluating Interventions that Promote Research Career Choice by Women or African-American, Hispanic, American Indian, or Pacific Islander Youth," and "Non-Academic Research and Research-Related Career Choice Of Graduate Students and Post-doctoral Fellows in Biomedical Sciences." These studies have resulted in poster presentation and peer reviewed publications.

- a. **Sunita R. Chaudhary,*** Elliot J. Coups, Shawna V. Hudson, Sandra M. Tomlinson-Clarke. Evaluating Characteristics and Outcomes of underrepresented Students Selecting

- Biomedical Laboratory Research Internship Programs. *Journal of Women and Minorities in Science and Engineering*, 2015, Vol. 21(3), 239- 254.
- b. Tomlinson-Clarke, Sandra, **Chaudhary, Sunita**, Gailliard, Bernadette. Exploring Personal and Contextual Factors Influencing Career Choice Among Biomedical PhD Students and Post-Doctoral Fellows. *Understanding Interventions Journal*, 2019, Vol. 10, Issue 1, <https://www.understandinginterventionsjournal.org/article/9886-exploring-personal-and-contextual-factors-influencing-career-choice-among-biomedical-phd-students-and-post-doctoral-fellows>
 - c. Tahir, Alifiya, **Chaudhary, Sunita**. How Social Variables Influence Career Interests of Biomedical Science and Engineering PhD Graduates. *Understanding Interventions Journal*, 2019, Vol. 10, Issue 1.
 - d. Bhatt, Rishita, West Bernadette, **Chaudhary, Sunita**. Biomedical career enrichment programs: Exploring women and minority participants' motivators and outcomes. *PLoS One*, 2020 Feb 14;15(2):e0228934. doi: 10.1371/journal.pone.0228934. eCollection 2020.

Complete List of Published Work in MyBibliography: <https://www.ncbi.nlm.nih.gov/myncbi/1LQU-jcsvry5-/bibliography/public/>