



Exponent[®]
Engineering & Scientific Consulting

Kunal Chaudhary, Ph.D., M.H.A.

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Professional Profile

Dr. Kunal Chaudhary is dedicated to finding innovative solutions that enhance healthcare delivery and has a focus on cell and gene therapy (CGT), health policy and management, digital health technologies (DHT), Medical Extended Reality (MXR), and the use of AI/ML in pre- and post-disease treatment phases. With his technical expertise and interpersonal skills, Kunal is a capable leader who supports Life Sciences and Healthcare organizations with their innovation strategy.

Previously, Kunal received his doctorate in Molecular Biology from RWTH Aachen University and a Master's in Molecular Medicine from the University of Ghent. He co-founded a startup that uses AI/ML to streamline drug development while working as a research scientist at Columbia University and served as the principal investigator on a commercialized breast cancer biomarker project.

At Exponent, Kunal assists biotech and pharmaceutical clients with product strategy, launch readiness, market access and pricing, health economics and outcomes research (HEOR), and policy analysis. He is identifying opportunities to integrate DHT such as health apps, wearables, MXR, and telehealth. By leveraging wearables to gather comprehensive physical and behavioral user metrics, healthcare providers can identify those at risk of disease, improve treatment adherence, and enhance the overall patient experience. Digital data can also be used to measure patient-centered endpoints in clinical trials and observational studies, promoting a true digital transformation in healthcare and improving value-based care. He can be reached at kchaudhary@exponent.com

Academic Credentials & Professional Honors

M.H.A., Health Administration, Columbia University, 2023

Ph.D., Science, RWTH Aachen University, Germany, 2012

M.S., Molecular Medical Biotechnology, University of Ghent, Belgium, 2007

Prior Experience

Associate Research Scientist, Columbia University, 2013–2022

Co-founder, Colabmate LLC, 2020-2022

Business development specialist, XStrahl Inc, 2021-2022

Professional Affiliations

American Association for the Advancement of Science (AAAS)

American Association for Cancer Research (AACR)

International Society for Pharmacoeconomics and Outcomes Research (ISPOR)

American Society for Radiation Oncology (ASTRO)

Languages

German

Hindi

Gujarati

Publications

Chaudhary, K. R., C. J. Kinslow, H. Cheng, J. M. Silva, J. Yu, T. Wang, T. K. Hei, B. Halmos and S. K. Cheng (2022). "Smurf2 inhibition enhances chemotherapy and radiation sensitivity in non-small-cell lung cancer." *Scientific reports* 12(1): 1-12

Kinslow, C. J., A. Tang, K. R. Chaudhary and S. K. Cheng (2022). "Prevalence of Estrogen Receptor Alpha (ESR1) Somatic Mutations in Breast Cancer." *JNCI Cancer Spectrum* 6(5): pkac060

Kinslow, C. J., P. Kumar, L. L. Cai, R. C. Sun, K. R. Chaudhary and S. K. Cheng (2022). "NRF2-pathway mutations predict radioresistance in non-small cell lung cancer." *Translational lung cancer research* 11(7): 1510

May, M. S., C. J. Kinslow, C. Adams, A. Saqi, C. A. Shu, K. R. Chaudhary, T. J. C. Wang and S. K. Cheng (2021). "Outcomes for localized treatment of large cell neuroendocrine carcinoma of the lung in the United States." *Translational Lung Cancer Research* 10(1): 71

Chaudhary, K. R., C. J. Kinslow, L. F. Ye, P. S. Upadhyayula, E. Y. Lee, R. C. Sun and S. K. Cheng (2021). "Serine hydroxymethyltransferase-2 as regulator of oxidative stress and chemoradiation resistance in lung adenocarcinoma." *Cancer Research* 81(13_Supplement): 1992-1992

Ye, L. F., K. R. Chaudhary, F. Zandkarimi, A. D. Harken, C. J. Kinslow, P. S. Upadhyayula, A. Dovas, D. M. Higgins, H. Tan and Y. Zhang (2020). "Radiation-induced lipid peroxidation triggers ferroptosis and synergizes with ferroptosis inducers." *ACS chemical biology* 15(2): 469-484

Wang, S., C.-C. Wu, H. Zhang, M. E. Karakatsani, Y.-F. Wang, Y. Han, K. R. Chaudhary, C.-S. Wu, E. Konofagou and S. K. Cheng (2020). "Focused ultrasound induced-blood-brain barrier opening in mouse brain receiving radiosurgery dose of radiation enhances local delivery of systemic therapy." *The British Journal of Radiology* 93(1109): 20190214

Kinslow, C. J., R. C. Sun, K. R. Chaudhary and S. K. Cheng (2020). "Serine and One-Carbon Metabolism in Breast Cancer Metastasis"—Letter." *Molecular Cancer Research* 18(11): 1755-1755

Kinslow, C. J., M. S. May, A. Saqi, C. A. Shu, K. R. Chaudhary, T. J. C. Wang and S. K. Cheng (2020). "Large-cell neuroendocrine carcinoma of the lung: a population-based study." *Clinical lung cancer* 21(2): e99-e113

Harb, A. A., M. A. Levi, J. J. Corvi, C. F. Nicolas, Y. Zheng, K. R. Chaudhary, Y. Akelina, E. P. Connolly

and J. A. Ascherman (2020). "Creation of a rat lower limb lymphedema model." *Annals of Plastic Surgery* 85(S1): S129-S134

Broustas, C. G., A. J. Duval, K. R. Chaudhary, R. A. Friedman, R. K. Virk and H. B. Lieberman (2020). "Targeting MEK5 impairs nonhomologous end-joining repair and sensitizes prostate cancer to DNA damaging agents." *Oncogene* 39(12): 2467-2477

Chaudhary, K. R., S. X. Yan, S. P. Heilbroner, J. R. Sonett, M. B. Stoopler, C. Shu, B. Halmos, T. J. C. Wang, T. K. Hei and S. K. Cheng (2019). "Effects of β -Adrenergic antagonists on chemoradiation therapy for locally advanced non-small cell lung cancer." *Journal of Clinical Medicine* 8(5): 575

Marciscano, A. E., A. Ghasemzadeh, T. R. Nirschl, D. Theodros, C. M. Kochel, B. J. Francica, Y. Muroyama, R. A. Anders, A. B. Sharabi and E. Velarde (2018). "Elective Nodal Irradiation Attenuates the Combinatorial Efficacy of Stereotactic Radiation Therapy and Immunotherapy Nodal Irradiation Attenuates Synergy with Immunotherapy." *Clinical Cancer Research* 24(20): 5058-5071

Black, P. J., D. R. Smith, K. Chaudhary, E. P. Xanthopoulos, C. Chin, C. S. Spina, M. E. Hwang, M. Mayeda, Y.-F. Wang and E. P. Connolly (2018). "Velocity-based adaptive registration and fusion for fractionated stereotactic radiosurgery using the small animal radiation research platform." *International Journal of Radiation Oncology* Biology* Physics* 102(4): 841-847

Wu, C.-C., K. R. Chaudhary, Y. H. Na, D. Welch, P. J. Black, A. M. Sonabend, P. Canoll, Y. M. Saenger, T. J. C. Wang and C.-S. Wu (2017). "Quality assessment of stereotactic radiosurgery of a melanoma brain metastases model using a mouselike phantom and the small animal radiation research platform." *International Journal of Radiation Oncology* Biology* Physics* 99(1): 191-201

Chaudhary, K., C. Liedtke, S. Wertenbruch, C. Trautwein and K. L. Streetz (2013). "Caspase 8 differentially controls hepatocytes and non-parenchymal liver cells during chronic cholestatic liver injury in mice." *Journal of Hepatology* 59(6): 1292-1298

Presentations

Chaudhary KR, Halmos B, Cheng H, and Cheng SK. Bmi1 resistance pathway and immune checkpoint blockade in lung cancer. Poster oral presentation, 63rd American Society for Radiation Oncology (ASTRO) Annual Meeting, Chicago, IL, 2021

Chaudhary KR, Kinslow CJ, Ye LF, Upadhyayula PS, Lee EY, Sun R, and Cheng SK. Serine hydroxymethyltransferase-2 as regulator of oxidative stress and chemoradiation resistance in lung adenocarcinoma. Oral presentation, Radiation Research Society Annual Meeting, Virtual, 2021

Chaudhary KR, Halmos B, Cheng H, and Cheng SK. Targeting cancer stem cell factor Bmi1 to sensitize non-small cell lung cancer to chemotherapy and radiation therapy. Oral presentation, 16th World Conference on Lung Cancer, International Association for the Study of Lung Cancer, Denver, 2015

Additional Education & Training

Principal Investigator: Columbia Lab-to-Market Accelerator Network. 2022

- Selected in a highly competitive life sciences startup incubator to commercialize a breast cancer companion diagnostic biomarker developed by me and my team for the CDK4/5 inhibitor treatment paradigm
- Elucidated the commercial potential of a prognostic biomarker including intellectual property due diligence, competitor analysis, market sizing, key stakeholders' validation, value proposition, clinical trial process, and regulatory strategy

1 of the 15 candidates selected from applicant across the globe for NASA Summer School. 2015

- Simulated the harmful effects of radiation exposure on astronauts' long term health during space exploration missions using data analysis of previous space missions
- Evaluated tools and procedures for operational implementation to improve real-time radiation risk analysis for astronauts' during spaceflight missions

Peer Reviews

Medicine, Biosimilars, Apoptosis, Neoplasia, OncoTargets and Therapy, Stem Cells and Cloning: Advances and Applications, Hepatic Medicine: Evidence and Research, Molecular Cancer Therapeutics, Aging, PLOS ONE, BMC Cancer, and Radiation Oncology