

# LAVANYA RAJESH KUMAR

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Assistant Professor

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<http://www.bhwellness.org/>

## Education

PHD | 2020 | MICHIGAN TECH | Applied Cognitive Science & Human Factors

Post Graduate Diploma | 2010 | Mother Teresa University | Clinical Psychology

MPHIL | 2009 | WOMEN'S CHRISTIAN COLLEGE | Applied Psychology

MSC | 2003 | UNIVERSITY OF MADRAS | Organizational Psychology

MMM | 2001 | PONDICHERRY UNIVERSITY | Marketing Management

BA | 1998 | MEENAKSHI COLLEGE FOR WOMEN | Economics

## Academic appointments

ASSISTANT PROFESSOR | UNIVERSITY OF COLORADO SCHOOL OF MEDICINE | 2022-PRESENT

As a faculty with the Behavioral Health and Wellness Program (BHWP), in department of psychiatry, I will have the opportunity to contribute to research, training, and technical assistance in behavioral health, cessation and wellness interventions at the community, state, and national levels. I will be:

- Providing training and technical assistance to various national, state, and community agencies on mental health, tobacco cessation, therapeutic techniques like Motivational Interviewing, workplace resiliency, health and wellness across the lifespan, etc.
- Working with communities, healthcare facilities, public health, and governmental agencies to promote health and wellness in priority populations.
- Offering training and consultation to healthcare and public health providers, administrators, and peer advocates on behavioral health, resilience development, addiction prevention and treatment, application of digital technology, etc.
- Developing and implementing evaluation and research plans for national, state, and locally funded projects.
- Collaborating on conceptualizing and developing grant proposals, managing projects, and manuscript preparation.
- Developing/undertaking projects in digital therapeutics related to holistic behavioral health.
- Spearheading international expansion for BHWP programs and services.
- Applying for national and state level grants on application of digital health technology to improve behavioral health access, engagement and treatment.

POSTDOCTORAL ASSOCIATE | YALE UNIVERSITY SCHOOL OF MEDICINE | 2020-2022

- Project management, brainstorming, planning, and troubleshooting behavioral health projects resulting in a high standard of scientific rigor and data driven outcomes.
- Providing Cognitive behavioral Therapy (CBT)+Motivational Interviewing (MI) based intervention to youth for vaping treatment with the goal of helping them quit vaping.

- Collaborating on development and facilitation of Motivational Enhancement Therapy (MET) intervention for adult smokers.
- Collaborating on development of focus group guides, MET and cognitive interview protocols.
- Developed an e-cigarette-based Approach-Avoidance Task (AAT), designed to assess approach-avoidance tendencies toward vaping cues. The goal is to apply it in vaping treatment interventions. Will be leading the pilot project.
- Contributed to research related regulatory processes (protocol generation, amendments, waivers, etc.) and grant applications resulting in accelerating project implementation by removing roadblocks.
- Consulting and strategizing on various aspects of existing projects with multiple teams to improve processes and outcomes.
- Conducting psychological evaluations for induction of participants into the current vaping cessation program.
- Manuscript generation and knowledge dissemination on effectiveness of various treatment approaches, tobacco products use behavior and perceptions, effect of factors like perception of control, resilience, motivation on health outcomes to inform future development of solutions.
- Analyzing data and publishing on effects of various interventions (Motivational Enhancement Therapy-MET, Contingency Management-CM, CBT) on substance use behavior to inform future treatment programs.
- Designing and facilitating qualitative research (cognitive interviews, survey design, focus group discussions, and related data coding and analysis) leading to development of result-oriented solutions.
- Collaborated on the development of a web-based CBT application for youth to culminate in a vaping quitting mobile application. Through this program we hope to provide opportunities to vaping quitting interventions to a wider population.

#### PHD RESEARCH SCHOLAR | MICHIGAN TECH | 2016-2020

- Designed and led innovative experiments and human subjects research in cognition and skill acquisition, resulting in scientific contribution towards development of novel diagnostic and training interventions.
- Designed and led experimental studies to determine the effect of different types of novel interventions on motor learning/skill acquisition and performance in different sensorimotor adaptation tasks. Studied their relation to various cognitive mechanisms including, and not limited to memory, attentional resources, proactive interference/inhibitory control/memory interference from prior learning, executive function, emotional intelligence, and individual differences. This included designing assessment tools like the motor learning program (Visuomotor Rotation and Obstacle avoidance on the lab's robotic equipment), recording and measuring neuropsychological, behavioral, physical fitness, and electrophysiological measures (EEG, GSR, Heart Rate).
- Independently handled the study related IRB regulatory and approval processes.
- Mentored junior researchers on grant writing and research processes, leading to successful
- Collaborated on a NIH funded Alzheimer's study where I administered neuropsychological assessments to identify potential cognitive impairments and Parkinson's symptoms. outcomes.
- Undertook independent projects in human factors and UX research that included:
  - Evaluating products/process for design effectiveness and user acceptance through application of heuristic evaluations and human factors techniques

(Hierarchical Task Analysis, Cognitive Task Analysis, Critical Decision Making, ethnographic approaches, creating personas, process mapping, workflow design, user testing)

- Consulting: As the UX lead for the product development team, I spearheaded the Human Computer Interaction and usability testing project for an Australian client's citizens science based mobile application. I managed the end-to-end user testing process for this client. This included stakeholder analysis/ mapping, construction of personas, hierarchical task analysis, and heuristic evaluation of the prototype, leading to the development and execution of a usability test. This test itself comprised of various scenarios, and UX techniques that included observation, verbal protocol, pre and post usability interviews and culminated in a usability test report for the client. The outcome was a testable prototype.
- Developing a quality improvement (QI) training process guide: I designed and conducted usability testing for a QI process flow for a health service provider in the Upper Peninsula area. This helped the administration and residents to identify crucial QI training projects.
- Collaborated on a research project on testing the effect of environmental factors on performance where I developed the experimental design, co-conducted the experiment, and contributed heavily to manuscript generation. The study helped us gain a better understanding of the impact of background noise on performance.

### **Other positions**

**FOUNDER & CHIEF PSYCHOLOGIST | PAC CENTRE4DEVELOPMENT | 2005-2016**

PAC Centre is a proprietary firm into development and dissemination of behavioral health, wellness, and personal growth initiatives, organizational consulting, and training.

- As a behavioral health interventionist, I facilitated organizations in establishing a well-rounded employee mental health initiatives that resulted in enhanced employee health and morale.
- Led and delivered behavioral health services in city schools resulting in improved student- teacher-parent relationships, healthier school environment.
- Designed and delivered behavioral counseling interventions in corporations and family settings with successful outcomes.
- Spearheaded mental health, learning and development, digital transformation, and change management projects in both, private and public sector organizations that led to improved employee experience, efficient processes, and enhanced performance.
- Initiated, conceptualized, and delivered managerial and behavioral training to professionals from various management levels (including executive teams and senior level employees) for diverse organizations (corporate, non-profits, and education) across various domains (leadership skills, sales, customer service, decision making, communication skills, presentation skills, team bonding) resulting in enhanced intrapersonal awareness, interpersonal working conditions, and performance.
- Conceptualized, designed, and delivered a unique master training program in counseling and coaching exclusively for women out of the workforce, as an avenue to build their second career.
- Consulted as a behavioral interviewer for executive level hiring of a leading conglomerate, resulting in a good employer-employee fit.
- Facilitated performance and process improvement projects for various clients leading in improved customer retention and operational efficiency.

- Led an organization-wide digital transformation-based change & communications project of an oil and gas conglomerate. This included collaborating with all the stakeholders (globally located Business Service Centers, senior management, project and Business Core teams, Global Change and Communications, learning and marketing teams) to drive stakeholder engagement, change management, product development, design, training, user acceptance testing, and implementation globally. The project was implemented successfully resulting in streamlined and standardized recruitment practices across the organization.

#### SCHOOL PSYCHOLOGIST | 2009-2013

- Offered psychological assessment, counseling and psychotherapy to students and staff of 3 city schools.
- Developed and conducted group training programs/workshops for students, teachers, and parents
- Offered strategic advice and guided teachers in creating behavioral assessment tools based on the new evaluation mandate.

#### OPERATIONAL RESEARCH CONSULTANT | SIAAP | 2003-2004

- As research consultant in South India Aids Action Programme (a non-profit into AIDS prevention, advocacy, and treatment), I undertook end to end implementation of the operational research project (framing of questionnaires, data analysis, liaison with experts, and generation of metrics for improvement and future directions) associated with the establishment of the model VCTC (Voluntary Counseling and Testing Center) center at the designated Government Hospital. I used tools like process mapping, observation to understand the workflow, semi structured interviews to identify the challenges faced by clients/users and the staff, potential problem areas/bottlenecks, and also the benefits and ROI. This study served as a blueprint for replication of VCTC services across the state of Tamil Nadu, India.
- Following the successful execution and completion of the VCTC research project, I was entrusted with the responsibility to initiate and complete two more WHO and UNESCO funded research projects in their associated hospitals and emergency clinics.

#### Honors, special recognitions and awards

- Portage Health Foundation's Graduate Assistantship -2020 (<https://blogs.mtu.edu/gradschool/2020/06/12/portage-health-foundation-assistantship-spring-2020-recipient-lavanya-rajesh-kumar/> )
- Yale's Innovation to Impact entrepreneurship program - 2019
- Michigan Technological University Innovation Corps (I-Corps) grant - 2016
- Research/ Teaching Assistantship, funding for PhD program- Michigan Technological University-2016-2020
- J.N. TATA Endowment Award - 2016
- Startup Leadership Program (SLP) Fellow-2015-16
- Among the top 3 finalists in Deshpande Foundation's (Sandbox Startups) - Business Plan Competition (digital mental health solution), India.
- Merit award for Poster presentation at TS Srinivasan Knowledge Conclave 2010- International Neurobiology Conference, India.
- Elected as executive member of the student body government throughout school and college.

### **Membership in professional organizations**

- Indian Association of Clinical Psychologists –Lifetime member
- Society for Research on Nicotine and Tobacco (SRNT)-2021, 2022
- American Psychological Association (APA)-2019, 2021
- Human Factors & Ergonomics Society (HFES)-2019
- Association for Psychological Sciences (APS)-2017
- Michigan Technological University student organizations (Graduate Student Government, Human Factors and Ergonomics Society, Graduate Society of Women Engineers, Indian Students Association)- 2016-2020
- Psi Chi International Honor Society in Psychology
- British Psychological Society, RQTU (Resister of Qualified Test Users)
- International Federation of University Women
- The Indus Entrepreneurs (TIE) 2013 – 2016
- LEO club member -1998

### **Major committee and service responsibilities**

- Serving in the Diversity, Equity and Inclusion Committee Meeting of the Council for Tobacco Treatment Program (CTTP), an international accrediting body for Tobacco Treatment Specialist Training Programs-November 2022-Present.
- Serving as the Early Career Faculty Representative on the Executive Committee (EC) of the Division of Community, Population, and Public Mental Health (CPP) in the department of psychiatry, School of Medicine, University of Colorado- October 2022-Present.
- Volunteered to judge The University of Colorado School of Medicine and Undergraduate Medical Education's 37th Annual Research Forum Poster Presentations-December 2022
- Served on the Presidential Search Committee - Michigan Technological University-2018.
- Elected and served as Executive Board member in school and college student governments-1995, 1998

### **Community engagement and volunteering**

- Supported in the facilitation of the inaugural 'Middle School Exploratory Day' at University of Colorado Anschutz Medical Campus.
- Race Volunteer - 5K/Family Fun Trek organized by Parker Recreation.
- Volunteered for Yale Day of Service event at Boys and Girls Club.
- So All May eat (SAME)-Denver
- Volunteered as the India Student Hub Campus Lead (an Embassy of India initiative), while pursuing my PhD Michigan Technological University and developed initiatives to bring together students of various countries and communities through service-related activities-2019-20.
- Spearheaded development of the MICS Academy for the Michigan Indian American Community Service (MICS). I also engaged in their other community development and social welfare activities like youth development and COVID response task force for students-2019, 2020
- Volunteered within the local community in the Upper Peninsula for the Houghton Portage Township Schools' FIRST robotic regional competition (as judge), in addition to other community events-2019.
- Offered counseling and life skills training services for children of orphanages in India-2015.

### **Professional registration**

- Rehabilitation psychologist with Rehabilitation Council of India (RCI)

### **Certifications & trainings**

- Tobacco Treatment Specialist Training Program - accredited by Council for Tobacco Treatment Training Programs
- DIMENSIONS: Motivational interviewing for Behavior Change – Levels 1 & 2
- DIMENSIONS: Tobacco Free Advanced Techniques Program
- DIMENSIONS: Well Body Advanced Techniques Program
- EFPA (European Federation of Psychologists' Associations) Level 1, British Psychological Society and Psytech Psychometric Testing Certifications
- Certified EMDR Practitioner - Humanitarian Assistance Program, U.S.A
- Certified NLP Practitioner - NFNLP, U.S.A
- Training in multiple diverse therapeutic methodologies (CBT, EMDR, MI, MET, Expressive arts therapy, Hypnotherapy, Transactional Analysis, and others).
- CNA (Certified Network Administrator) – Novell Netware/APTECH

### **Review and referee work**

- Grant proposals of the Colorado Department of Public Health and Environment's State of Tobacco Education and Prevention Program (STEPP)
- Grant proposals for the Human Factors Ergonomic Society-2021
- Conference rapid response abstracts for SRNT's March 2022 annual meeting
- Conference abstracts for the Tobacco Regulatory Science 2021 meeting
- Abstracts, papers, and symposium for the American Psychological Association's annual Technology, Mind & Society Conference-2021
- Book chapters of a textbook on Cognitive Psychology for an online educational provider (Top Hat)

### **Invited presentations**

- Panelist in Digital Innovation and Mental Health 2023. Topic: 'Who is going to pay for this'- UK (<https://www.beckyinkster.com/dimh2023whoisgoingtopayforthis> , <https://www.beckyinkster.com/dimh>) - July 20,2023.
- 'Digital health Entrepreneurship – a convergent discipline in mental health care' - MOP Vaishnav College for Women, Chennai, India – August 17, 2023.
- Speaker for National Human Resources Conference - Chennai, India
- Business Idea presentation at Kauffman Foundation's 1 Million Cups program - Hancock, Michigan - <https://www.mtecsz.com/stress-app-and-artisan-bread/>
- Business idea pitching presentation at Deshpande Foundation - Hubli, India

### **Teaching**

- Personality Theories (Summer 2019, Spring 2020)-Independent instructor, Michigan Technological University.
- Abnormal Psychology (Fall 2019)-Independent instructor, Michigan Technological University.
- Statistics - Teaching Assistant, Michigan Technological University.
- Organizational Behavior - Visiting Faculty, Stansfield Business School & SSN School of Management, Chennai, India.
- Statistics - Visiting Assistant Professor, SRM University, Chennai, India.

- Micro-economics - Visiting Faculty, Bushara International Institute of Graduate Studies (Offshore campus of Northwood University, U.S.A & Charles Sturt University, Australia), Mumbai, India.

## Grants

“Health System Change Community of Practice” contract DH230051621: Co-Investigator, Missouri Department of Health and Senior Services, Bureau of Community Health and Wellness, 12/1/2022-4/28/2024, 20% effort, \$178,769

BHWP is providing technical assistance and training to Missouri primary health care and behavioral health care facilities to reduce tobacco use and dependence-related disparities among populations with higher prevalence of tobacco use and exposure to secondhand smoke through the adoption and implementation of evidence-based nicotine addiction treatment and tobacco-free campus policies as a standard of care. We are assisting the state health department in engaging healthcare champions in web-based Communities of Practice (CoP). BHWP is utilizing a structured CoP learning environment, combining six (6) didactic webinars by subject matter experts, six (6) companion peer-based learning sessions, and personalized technical assistance to participating behavioral health and primary health care facilities.

“Regional Networks for Comprehensive Tobacco Treatment (RNCTT)” Tobacco Education, Prevention, and Cessation Grant Program: Colorado Department of Public Health and Environment, Co-Investigator, 7/1/2023-6/30-2026, 15% effort, \$750,00

The Regional Networks for Comprehensive Tobacco Treatment (RNCTT) project will build cross-sectional statewide capacity to identify and effectively address pervasive treatment gaps. Throughout this three-year grant cycle, the Behavioral Health and Wellness Program (BHWP) at the University of Colorado Anschutz Medical Campus will sequentially engage three regions across Colorado, including rural/frontier regions. Each region will participate in a facilitated 9-to-11-month structured improvement process which has been proven nationally to foster health systems change and build a continuum-of-care. Through an initial two-day Action Forum, regional leaders from healthcare systems and community agencies serving health disparity populations will utilize state and local data to identify local priority populations. They will define a measurable consensus change goal and determine the strategies their individual agencies will implement to reach this common goal. As one essential element of regionally defined strategies, BHWP will encourage agencies to implement and/or reinvigorate tobacco-free campus policies. Throughout the project period, BHWP will provide consultation and opportunities to attend TUD treatment and health disparity trainings tailored to each participating region’s needs. BHWP will convene regional leaders again at the close of their project to share their agencies’ experiences, lessons learned, and goals for the future, with an emphasis on agreeing to a local sustainability plan. The RNCTT’s impact evaluation will capture regional case studies and cumulative outcomes, as well as recommendations for scalability and sustainability.

## Bibliography

- Rajeshkumar, L., & Trewartha, K. (2019). Advanced spatial knowledge of target location eliminates age-related differences in early sensorimotor learning. *Experimental Brain Research*, 237(7), 1781-1791.
- Durocher, J. J., LewAllen, S. E., Maanika, C. B., Elmer, S. J., Rajeshkumar, L., & Trewartha, K. M. (2019). Effect of Dynamic Eccentric Leg Exercise Training on Functional Fitness and Arterial Stiffness in Older Adults. *The FASEB Journal*, 33(S1), 695-15.
- Morean, M. E., Davis, D. R., Kong, G., Bold, K. W., Camenga, D. R., Suttiratana, S., Lee, J., Rajeshkumar, L., & Krishnan-Sarin, S. (2021). Demographic and substance use-

related differences among high school adolescents who vape cannabis versus use other cannabis modalities. *Drug and Alcohol Dependence*, 228, 109104.

- Morean, M.E., Davis, D., Bold, K., Kong, G., Lee, J., Rajeshkumar, L., & Krishnan- Sarin, S. (2021). Psychometric evaluation of the Short-Form Vaping Consequences Questionnaire for use with high school adolescents who use and do not use e-cigarettes. *Nicotine & Tobacco Research*.
- Davis, D. R., Bold, K. W., Camenga, D., Kong, G., Jackson, A., Lee, J., ... & Morean, M. E. (2022). Use and Product Characteristics of "Tobacco Free Nicotine" E-Cigarettes Among Young Adults. *Nicotine & Tobacco Research*.
- Davis, D. R., Bold, K. W., Morean, M. E., Kong, G., Jackson, A., Simon, P., ... & Krishnan-Sarin, S. (2022). Association of Youth Impulsivity and Use of E-cigarette Devices, Flavors, and Frequency of Use. *Addictive Behaviors*, 107386.
- Rajeshkumar, L., Morean, M.E., Kong, G., & Krishnan- Sarin, S. (2023). Association Between Exposure to E-Cigarette Content Across 10 Social Media Sites and Youth E-Cigarette Use. *57th Hawaii International Conference on System Sciences* (in press).

(Google Scholar Link:

[https://scholar.google.com/citations?view\\_op=list\\_works&hl=en&user=FHw\\_770AAAAJ&gmla=AJsN-F4DzPkRjlgGnPMVSI6ZRdf7f9WF2YWsVopikX0iTA7piQ5rKREvAjF\\_KfWgdCt61kTNJCSUmf-3UBWUEoZUI4OAz0m0hSYEUl92A1ONPyv\\_7EBwFWUu0FoFBchWhnnxGRnHixo-](https://scholar.google.com/citations?view_op=list_works&hl=en&user=FHw_770AAAAJ&gmla=AJsN-F4DzPkRjlgGnPMVSI6ZRdf7f9WF2YWsVopikX0iTA7piQ5rKREvAjF_KfWgdCt61kTNJCSUmf-3UBWUEoZUI4OAz0m0hSYEUl92A1ONPyv_7EBwFWUu0FoFBchWhnnxGRnHixo-))

Other:

- Kumar, L. R. (2021). To Examine the Effects of Exercise & Instructional Based Interventions on Executive Functioning, Motor Learning & Emotional Intelligence Abilities Among Older Adults (Doctoral dissertation, Michigan Technological University).
- Virtual Simulation Motivational Interviewing Training module using Avatars

Conference:

- Rajeshkumar, L., Kong, G., & Krishnan-Sarin, S. (2022, March). Perceived Control Over Anxiety Related Events and Nicotine Withdrawal Among Adolescent Smokers. Society for Research on Nicotine and Tobacco (SRNT), Baltimore, MD.
- Rajeshkumar, L., Kong, G., Morean, M.E., Davis, D., Bold, K., Camenga, D. R., Cavallo, D., Jackson, A., Davis, D., & Krishnan-Sarin, S. (2022, March). Youth Exposure to Vaping Related Ads & Posts on Social Media Platforms and Vaping Status. SRNT, Baltimore, MD.
- Rajeshkumar, L. et al (2019, May). Effect of Eccentric Exercise on Motor Learning and Emotional Intelligence Abilities in Older Adults. Michigan Chapter of the Society for Neuroscience (MISfN), Kalamazoo, MI.
- Rajeshkumar, L. et al (2019, February). Investigating the Effect of Exercise on Motor Learning and Emotional Intelligence Abilities in Older Adult. Graduate Research Colloquium of Michigan Technological University, Houghton, MI.
- Rajeshkumar, L. et al (2019, August). Factors Influencing Exercise-Induced Improvements in Cognitive and Physical Functions in Older Adults. American Psychological Association, Chicago, IL.
- Rajeshkumar, L. & Trewartha, K. M. (2016 May). The Role of Spatial Working Memory in Age-Related Declines in Motor Learning. (MISfN), Ann Arbor, MI.
- Rajeshkumar, L. & Trewartha, K.M. (2016 November). The Role of Spatial Working Memory in Age- Related Declines in Motor Learning. Society for Neuroscience, Washington, D.C.



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- Nagesan, L. & Easvaradoss. V. (2010, February). To Study the Relationship Between Resilience, Personality, Mental Health and Hemispheric Dominance Among College Students. T. S. Srinivasan Knowledge Conclave, Chennai, India.
- OPTIMUS was selected for E-Poster presentation at Yale ventures Innovation Summit 2022: [https://app.thumbraise.com/v/6C3vn\\_OjGMjFCyWUBLZeN](https://app.thumbraise.com/v/6C3vn_OjGMjFCyWUBLZeN)

Articles on LinkedIn:

- <https://www.linkedin.com/pulse/encouragement-secret-sauce- happiness-success-lavanya-rajesh-kumar/>
- Neuroscience and Thought Power: <https://www.linkedin.com/pulse/u- have-power-lavanya- rajesh-kumar/>