

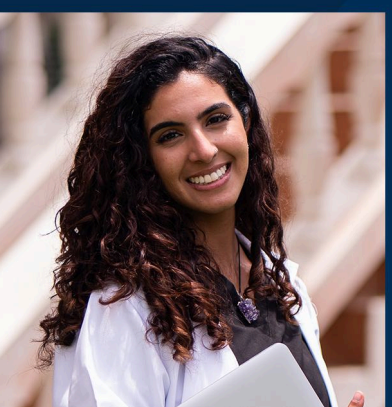




WINDSOR INSIGHT

A NEW BEGINNING

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Windsor Insight: A New Beginning

We are proud to announce the relaunch of Windsor Insight, Windsor University School of Medicine's official publication, after a brief hiatus. Once a vibrant platform for celebrating academic excellence, institutional milestones, and community achievements, Windsor Insight had been temporarily placed on hold. Today, we are excited to bring it back; with a fresh vision, a renewed commitment, and a dynamic new team at the helm.

Prof. T. V. Sundaresha, a respected academic and visionary educator, founded the first-ever Windsor Pulse magazine in 2008, marking the beginning of a platform dedicated to student voices and academic expression. His pioneering initiative laid the foundation for future contributions, with the baton later picked up by Dr. Bikramjit S. Saroya in 2019, who continued to expand and evolve the publication into a dynamic reflection of the Windsor University School of Medicine community.

The previous editions of Windsor Insight from Spring, Summer, and Fall of 2008 to the 2019 and later booklets offered rich snapshots of our community, capturing everything from faculty highlights and student achievements to institutional updates and inspirational stories. While these past publications provided a solid foundation, our relaunch will build upon that legacy to reflect the growth and forward momentum of Windsor today.

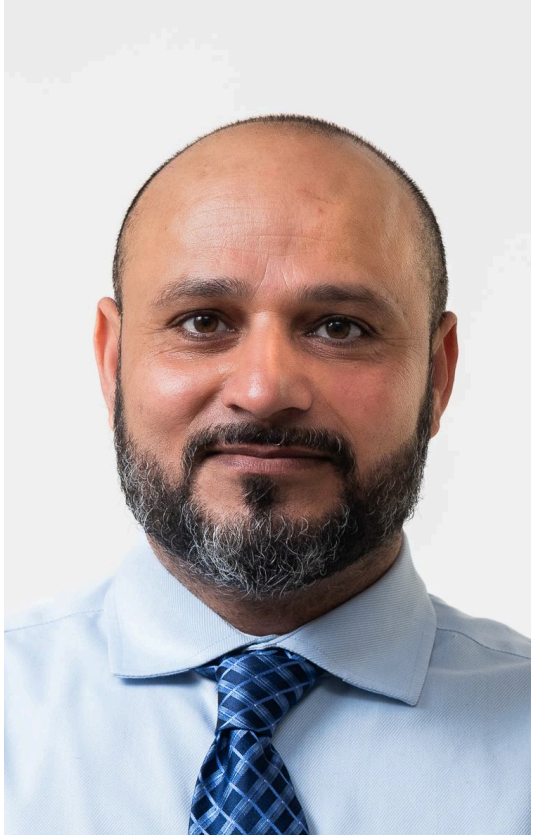
With this new chapter, Windsor Insight receives more than just a revival; it receives a complete facelift. Featuring a revamped editorial board, new contributors, and an inclusive student-faculty collaboration, this platform will now serve not only as a newsletter but as a scholarly and professional medium. Our goal is to provide space for:

- Student-led research and peer-reviewed articles
- Faculty contributions and expert perspectives
- Campus developments and institutional announcements
- Success stories, alumni highlights, and global impact features

This initiative will offer our students a unique opportunity to engage with academic publishing, critical review processes, and thought leadership skills essential for future physicians and scholars.

We are confident that this revitalized Windsor Insight will become an integral part of our academic and professional community. We welcome contributions, encourage feedback, and look forward to seeing the collective voice of Windsor thrive once again.

> "Let this be not just a publication—but a reflection of who we are, and where we are headed.
>
> **The Windsor Insight Editorial Team**





Committee Members of Insight

Dr. Venkatesh Bheemaiah

Dean of Student Affairs, Windsor University School of Medicine, St. Kitts

Dr. C. B. Venkatesh is a dedicated medical professional and academician with over three decades of experience in medicine, occupational health, and medical education.

Born on July 13, 1968, in Bangalore, India, he pursued his M.B.B.S. from Dr. B.R. Ambedkar Medical College in 1993 and later earned a Diploma in Industrial Health from Bangalore Medical College in 1998.

His early career began as a medical officer at Escorts Mahle Ltd, where he oversaw the health and wellbeing of over 2,000 workers, focusing on preventive care and occupational health. Dr. Venkatesh also worked in NorthSide Hospital and M.S. Ramaiah Hospital, gaining valuable clinical experience. His commitment to public health was evident during his leadership role in India's Pulse Polio Immunization Programme.

Between 1996 and 2005, he established and ran a successful family clinic and diagnostic laboratory in Bangalore. Alongside his clinical career, Dr. Venkatesh has been deeply involved in teaching. His teaching journey began during his postgraduate studies, instructing MBBS students in Preventive and Social Medicine, and continued through his corporate health education efforts.

For the past 14 years, Dr. Venkatesh has been a key faculty member at Windsor University School of Medicine in St. Kitts, where he currently serves as the Dean of Student Affairs. His academic interests span Occupational Health, Preventive and Social Medicine, Embryology, and Clinical Medicine.
He has actively participated in numerous national and international medical conferences, including those hosted by the Karnataka Association of Community Health, Indian Institute of Science, and Caribbean Tertiary Level Personnel Association (CTLPA). He has also completed specialized workshops in cardiac technologies, trauma care, and forensic emergency medicine.

Dr. Venkatesh's contributions have been recognized through several accolades, including the Outstanding Teaching Award (2006 & 2011), Best Professor Award (2009), and Students Choice Award (2009). He is an executive member of the Caribbean Tertiary Level Personnel Association and maintains a strong interest in sports, especially badminton.

Dr. Suraj Reddy

Assistant Clinical Dean

Dr. Suraj Reddy is a passionate Drug Safety Physician and Academic Mentor, bringing over 15 years of clinical, academic, and regulatory experience to Windsor University School of Medicine (WUSOM).

In his multifaceted role at WUSOM, he is deeply involved in medical education, student mentoring, and professional development, making a lasting impact on the next generation of physicians.

Dr. Suraj plays a pivotal role in preparing students for success on the USMLE and OSCE exams, delivering high-yield, clinically integrated sessions that blend academic rigor with practical insights. Beyond the classroom, he offers individualized career guidance, research mentorship, and residency preparation, including coaching on interviews, CV writing, and personal statements. His mentorship is particularly valuable to international medical graduates (IMGs), as he is well-versed in the unique challenges they face when navigating the path to residency in the United States and other competitive systems.

With a strong foundation in pharmacovigilance, regulatory affairs, and medical safety, Dr. Suraj bridges the gap between academic knowledge and real-world application. His dedication to advancing medical education and his commitment to student success make him a respected and sought-after mentor at WUSOM.

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Dr. Owais Khan

Director of Admissions

Dr. Owais Khan was born in Pakistan and immigrated to Canada at a young age. He holds a license as a Practical Nurse in Canada, earned his MD degree, and completed a Diploma in Health Professions Education, Accreditation, and Assessment from Keele School of Medicine in collaboration with FAIMER and CenMEDIC.

Most recently, in 2025, he obtained his Project Management Professional (PMP) certification from the Project Management Institute.

Since 2012, Dr. Khan has served Windsor University School of Medicine in various capacities; from Teaching Assistant to Director of Operations (Canada), Marketing, and currently as Director of Admissions. In these roles, he has introduced and led digital marketing initiatives, developed strategic enrollment growth plans, coordinated scholarship efforts with financial aid staff, and secured approvals for multiple financial aid programs, including Alberta Student Aid and the Ontario Student Assistance Program (OSAP). He has also leveraged student data analytics to shape effective admissions policies and spearheaded process optimization initiatives that improved operational efficiency and reduced costs.

His journey at Windsor has come full circle; from guiding students through the application process to organizing meaningful graduation ceremonies that celebrate their achievements alongside peers, faculty, families, and loved ones.

Alan Mandalaoui

Basic Sciences Student

Alan Mandalaoui, a first-year medical student at Windsor University School of Medicine, is originally from New York, United States.

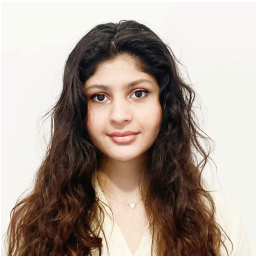
He completed his high school education at Bay Ridge Preparatory School, graduating with an outstanding GPA that distinguished him as a strong candidate for admission into Windsor's Biomedical Sciences Program (formerly known as the Premedical Program).

Alan's early exposure to the medical field includes hands-on experience working in a pediatric clinic, where he served as a physician's assistant. This role further reinforced his desire to pursue a career in medicine and deepened his interest in patient care.

With a lifelong passion for medicine and a strong commitment to academic and professional development, Alan is an active member of Windsor Insights. He looks forward to engaging with peers, contributing to thoughtful discussions, and broadening his understanding of the medical profession beyond the classroom. Motivated by a deep curiosity for science and a dedication to compassionate care, Alan aspires to become a well-rounded, empathetic, and impactful physician.

Isha B. Chitroda

Clinical Sciences Student



Isha Chitroda, a medical student at Windsor University School of Medicine, was born in Mumbai, India. Her academic journey has been shaped by unwavering dedication and a deep-rooted passion for healthcare that began early in life.

After excelling in her high school studies both in India and the United States, Isha was accepted into Windsor's Biomedical Sciences Program (previously known as the Premedical Program), where she continued to demonstrate academic excellence and a strong clinical interest.

Her path was not without challenges; leaving India at a young age to live alone in a foreign country, far from the comfort and support of family, required courage and resilience. Tasks that are typically shared with or supported by parents became her sole responsibility.

Yet, driven by her passion to become a physician and make a meaningful difference in the world, Isha embraced each challenge with determination and grace.

In August 2023, she successfully passed the USMLE Step 1 and is currently completing her clinical rotations in the United States, where she is gaining valuable hands-on experience in a variety of healthcare settings across multiple specialties.

An active member of Windsor Insight, Isha is enthusiastic about using the platform to connect with peers, share perspectives, and contribute meaningfully to academic and professional discourse within the Windsor community. With a global perspective and a steadfast commitment to medicine, she aspires to become a compassionate, skilled, and impactful physician.

Ohemaa Ofori

Clinical Sciences Student

Born in Accra, Ghana, Ohemaa Ofori is a medical student at Windsor University School of Medicine. She has studied in Ghana and Canada.

She showed a strong sense of purpose and an unwavering enthusiasm for healthcare at a young age, and this dedication has defined her academic trajectory to this day.

Ohemaa was accepted into Windsor's Biomedical Sciences Program (previously the Premedical Program) after achieving academic success in high school. There, she demonstrated a strong interest in clinical medicine and a constant commitment to academic performance.

Ohemaa gained resilience, independence, and the capacity to handle both personal and academic obstacles with maturity and focus as a result of her early adaptation to life away from home. She persisted in her quest for greatness, keeping her long-term objective of becoming a doctor at the forefront, despite the challenges of living independently in a new setting.

Ohemaa, a third-year medical student, is now participating in clinical rotations to hone her clinical abilities in actual healthcare settings and obtain practical experience in a variety of medical specialties.

Ohemaa is excited to work with colleagues, share ideas, and take part in important academic discourse within the Windsor community as an active contributor to Windsor Insight. She wants to become a well-rounded, influential doctor who is committed to using medicine to improve lives. She has a global perspective and a strong dedication to compassionate treatment.

Sudheeksha Venkatesh

Clinical Sciences Student

Sudheeksha Venkatesh, a medical student at Windsor University School of Medicine, was born in India but spent most of her formative years on the beautiful Caribbean island of St. Kitts.

Surrounded by the island's natural beauty and a close-knit community, she developed a deep curiosity about the world around her, particularly the human body. Her entire education took place in St. Kitts including medical school.

From a young age, Sudheeksha's passion for science combined with a strong desire to help others naturally led her toward a career in medicine. This calling was further inspired by her father, a dedicated physician whose compassion and commitment to patient care left a lasting impression on her. Demonstrating exceptional academic ability, Sudheeksha graduated at the top of her college and was awarded a prestigious state scholarship award, achievements that paved the way for her entry into medical school. She approaches her studies with dedication and a commitment to growth. Despite challenges, Sudheeksha has shown great perseverance and unwavering focus on her goals. Motivated by a sincere desire to make a difference, she is determined to build a career centered on patient care and healing.

She has successfully passed the USMLE Step 1 and is currently completing her clinical rotations in the United States where she is gaining hands-on experience and deepening her clinical knowledge.

Sudheeksha is excited to be an active member of Windsor Insight and looks forward to collaborating with students, faculty, and other members. Sudheeksha's story is one of determination, heart, and a global perspective; traits that will no doubt make her a compassionate and skilled physician in the years to come.

Andre Fearon

Basic Sciences Student

Andre Fearon is a third-semester basic science student at Windsor University School of Medicine. Originally from New Jersey, he earned his undergraduate degree from Rider University and a Mas ter's degree from Texas A&M University.

He previously served as a commissioned officer in the United States Military, where he was stationed in multiple duty stations in various countries. His military service instilled in him a deep sense of discipline, leadership, and commitment to serving others—values that continue to shape his path in medicine.

Andre has professional experience as a medical scribe, which provided him with firsthand exposure to patient care and the importance of clear clinical communication. He has also contributed to various volunteer initiatives with organizations such as Hospice of New Jersey, Newark Beth Israel Medical Center, and the Special Olympics of New Jersey. These experiences reinforced his passion for medicine and his desire to serve diverse and underserved communities.

Currently, Andre is an active editor for the Windsor Insight Committee. He aspires to become a sports medicine physician, driven by his interest in physical performance, rehabilitation, and helping individuals recover from injury to return to healthy, active lives. His goal is to integrate his background in leadership, service, and science to provide compassionate, evidence-based care to patients across all levels of athletic ability.

New Faculty 2025

Dr. Samira Abdul Wajid

Professor of Microbiology & Immunology
Chair, Molecular Sciences
Director, Student Advisory & Support Program (SASP)
Windsor University School of Medicine | St. Kitts

Windsor University School of Medicine proudly welcomes Dr. Samira Abdul Wajid, a seasoned educator and clinical microbiologist with global experience and a passion for student success. As Professor of Microbiology & Immunology, Chair of Molecular Sciences, and Director of SASP, she drives academic excellence and student support.

Dr. Wajid holds an MBBS, an MD in Microbiology, and certifications in infection control, diabetes management, and USMLE-focused teaching. Her leadership spans institutions in India, the Caribbean, and the Netherlands Antilles, with roles including Dean of Student Affairs and Chair of Microbiology.

Renowned for USMLE-aligned teaching and interdisciplinary curriculum design, she integrates basic sciences with clinical relevance and leads high-yield assessments. Her work in SASP enhances academic support, wellness, and mentorship.

An accomplished researcher and journal reviewer, Dr. Wajid brings fluency in four languages and a strong commitment to holistic medical education. Windsor is honored to have her as a faculty leader and student advocate.

Dr. Samith Ahmed

Professor and Chair of Patho-Physiology | Windsor University School of Medicine

Windsor University School of Medicine proudly welcomes Dr. Samith Ahmed, an accomplished pathologist and academic leader with over 12 years of global experience in teaching, research, and administration. As Professor and Chair of Patho-Physiology, he plays a key role in shaping students' understanding of disease mechanisms and clinical relevance.

Dr. Ahmed holds an MBBS and MD in Pathology, along with a FAGE Fellowship, and is board-certified in India and Trinidad & Tobago. He leads core modules like Fundamental Concepts and the Cardio-Hematopoietic System, and also teaches Research and Clinical Medicine.

Previously serving as Dean and senior faculty across Caribbean institutions, Dr. Ahmed has led curriculum development, faculty training, and accreditation efforts. His research spans oncopathology, microbiology, imaging, and public health, with numerous peer-reviewed publications.

A journal reviewer and editorial board member, he is also trained in modern educational tools like NBME item writing, flipped classrooms, and Anatomage. At Windsor, Dr. Ahmed inspires academic excellence and clinical reasoning in future physicians.

Dr. Somashekar Shetty B

Professor of Biochemistry
Department of Molecular Sciences
Windsor University School of Medicine

Windsor University School of Medicine proudly welcomes Dr. Somashekar Shetty B, a distinguished biomedical scientist and educator with over 25 years of global academic experience. As Professor of Biochemistry, he brings deep expertise, research excellence, and a passion for integrated, USMLE-aligned teaching.

Dr. Shetty holds a Ph.D. in Biochemistry from MAHE, India, with research focused on wound healing and antioxidants. He has taught at leading institutions across the Caribbean and Asia. A prolific researcher with 18+ peer-reviewed publications, his work spans herbal medicine, oxidative stress, and photobiomodulation. He is an active presenter, session chair, and journal reviewer, contributing globally to medical education and research.

At Windsor, Dr. Shetty leads biochemistry instruction, assessments, and academic advising while mentoring students and guiding research. His innovative teaching and lifelong commitment to excellence make him a valuable addition to Windsor's academic community.

Windsor Alumni Association

A Legacy of Camaraderie, Growth, and Giving Back

At Windsor University School of Medicine, we are more than an institution—we are a family. The spirit of camaraderie runs deep in our halls, classrooms, and clinical rotations. Whether on the island or across the globe, every Windsor student and graduate carries with them a shared identity, a shared journey, and a shared responsibility. We belong to Windsor, and Windsor belongs to us.

One of the greatest assets of the university is its students and alumni. With graduates practicing across North America and the Caribbean in diverse medical specialties, the Windsor Alumni Network is a growing force for professional excellence and community strength. The connections forged during medical school serve not only as a foundation for lifelong friendships, but also as a vital networking tool; one that can open doors to observerships, externships, and residency opportunities.

Giving Back to Move Forward

As Windsor continues to evolve, so does our alumni mission. We are actively working to give back; not just in words, but in action. Future plans are already in motion to enhance the support available to current and incoming students, helping them navigate the complex path to residency and professional success.
Our next steps include:

- Building a comprehensive graduate student database to facilitate communication and collaboration.
- Creating opportunities for alumni to mentor students, offer shadowing or observership experiences, and potentially provide monetary assistance for those in need.
- Hosting alumni events in key cities, where graduates can reconnect, share experiences, and foster new professional relationships.

Windsor Alumni Association
A Legacy of Camaraderie, Growth, and Giving Back

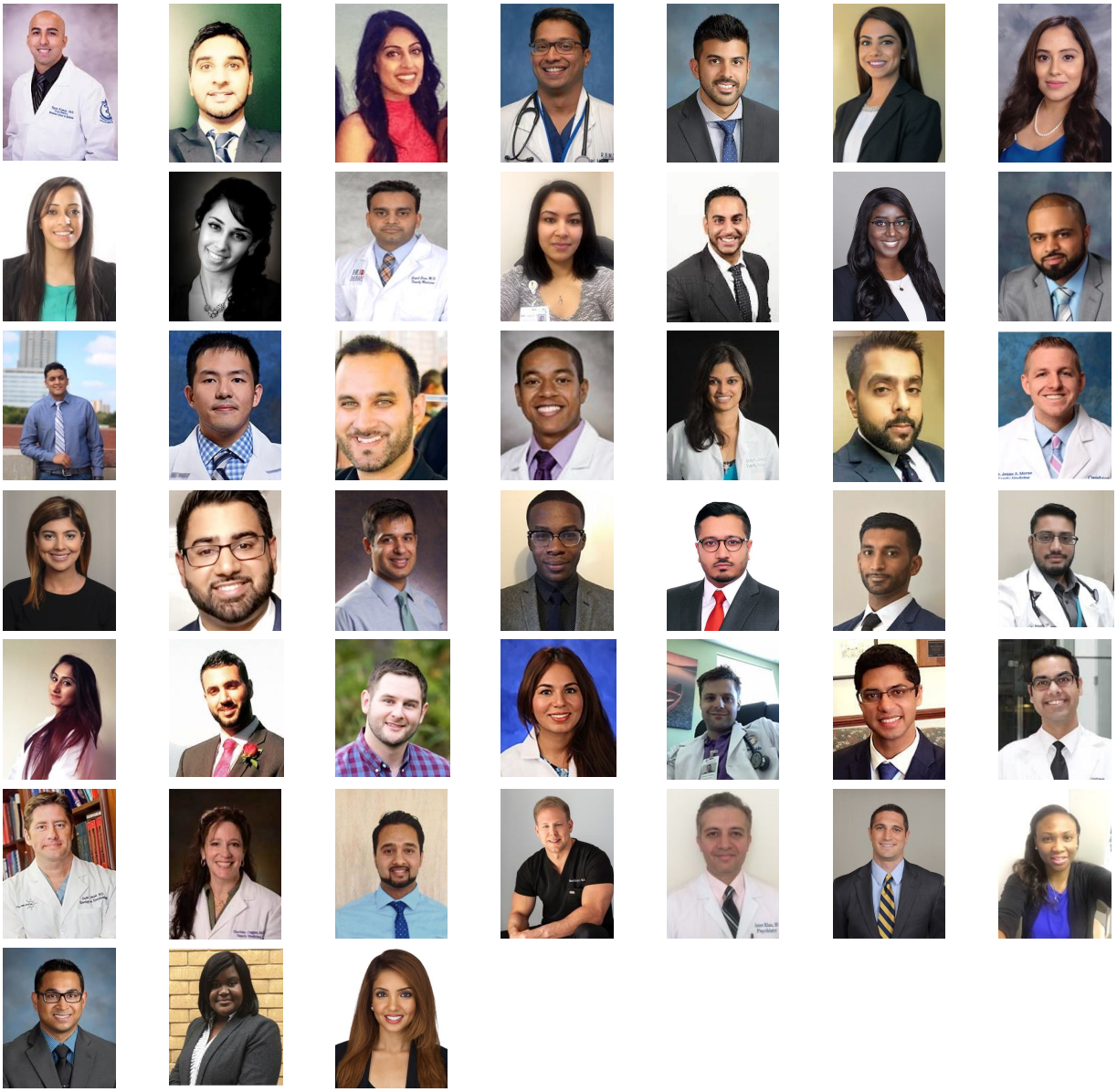
We are tentatively planning our next alumni meet-and-greet in Toronto in May 2026 for a wonderful opportunity to reunite with former classmates, celebrate each other's achievements, and strengthen the Windsor community in Canada.

Residency Placements: Our Shared Success

Our commitment to excellence is reflected in our alumni's success in securing competitive residency positions. Windsor graduates have matched in a wide array of specialties including **Internal Medicine, Family Medicine, Pediatrics, Psychiatry, Neurology, Emergency Medicine, and Surgery.** Alumni have been placed in top institutions around the globe and especially across the U.S. and Canada.

This growing list of residency placements is a testament to the hard work of our students, the strength of our curriculum, and the unwavering support of our faculty and alumni. As we continue to build on this legacy, we invite all alumni to be a part of the journey. **Reach out, reconnect, and reinvest in the future of Windsor.** Together, we can ensure that every student has the tools, support, and inspiration they need to succeed.

If you are a Windsor graduate and would like to get involved, please contact us at **alumni@windsor.edu.**



Residency Celebration

Windsor University School of Medicine Celebrates Graduates Matching into Multiple Residency Programs at U.S. Information Office's Event in Illinois

On Friday, March 21, 2025, the U.S. Information Office in Illinois hosted a special event to honor the remarkable achievements of Windsor University School of Medicine graduates who successfully matched into multiple residency programs across the United States. The celebration brought together alumni, faculty members, students, and community leaders to recognize the hard work, perseverance, and dedication that led to this significant milestone.

This year's residency match results reflect Windsor University's ongoing commitment to academic excellence and clinical training. Graduates secured positions in a broad range of specialties, including Internal Medicine, Family Medicine, Psychiatry, Pediatrics, Obstetrics & Gynecology and General Surgery, in well-respected institutions across the country. Many of the students credited their success to the university's rigorous curriculum, supportive faculty, and early clinical exposure.

The event served not only as a celebration but also as an inspiration for current students aspiring to follow in the footsteps of their accomplished peers.

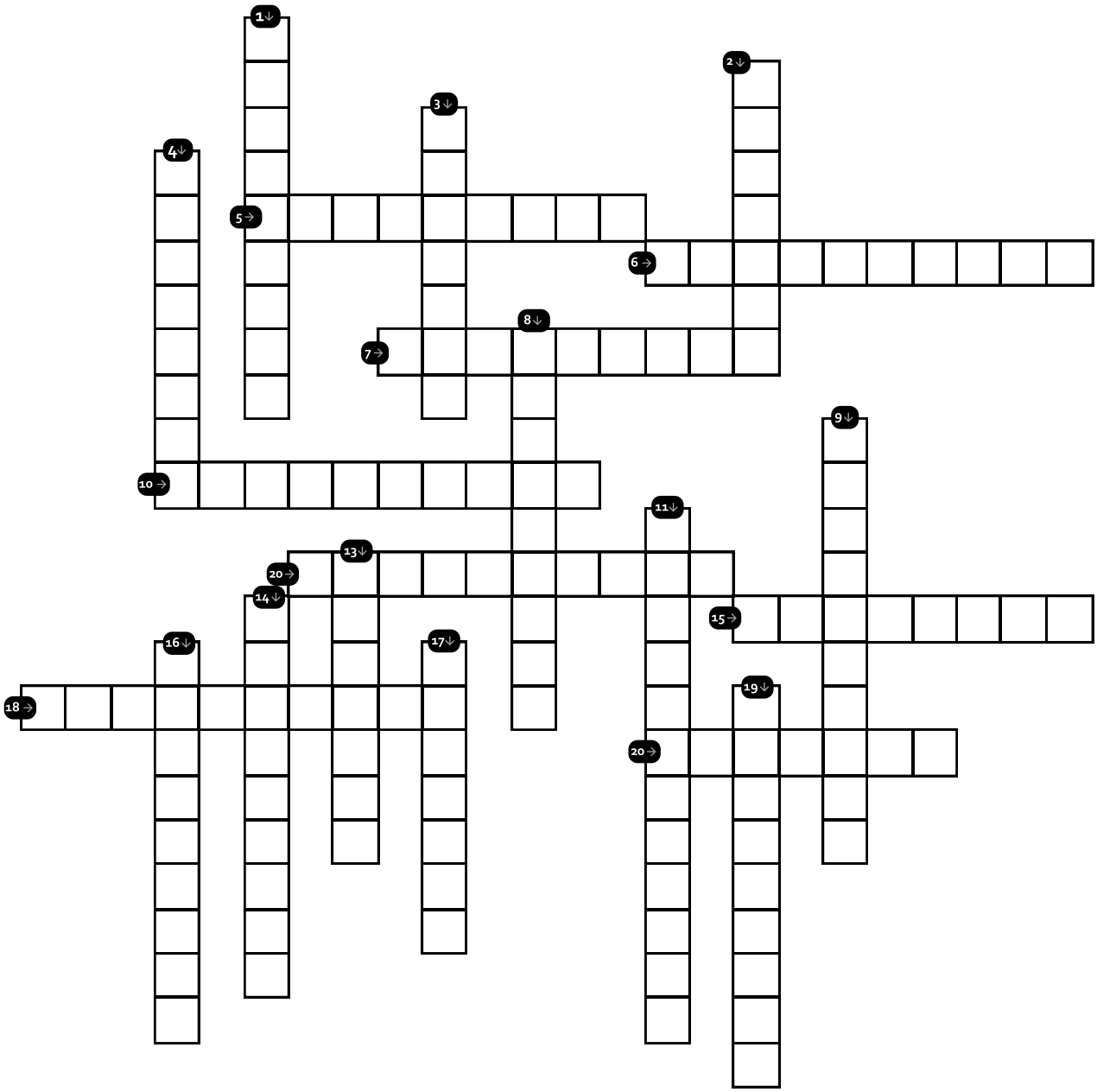
Faculty and administration shared heartfelt messages, highlighting the resilience and determination of these graduates, many of whom overcame personal and academic challenges to reach this stage in their medical journey.

Dr. Radhika Chimata, Dean of Clinical sciences at Windsor University, remarked during the ceremony: "This is more than just a celebration of match results; this is a celebration of dreams realized, of the countless hours spent in study and service, and of the commitment our students have shown to becoming skilled, compassionate physicians."

Windsor University School of Medicine continues to take pride in producing graduates who are not only clinically competent but also deeply dedicated to serving diverse patient populations with empathy and professionalism. The match success of the Class of 2025 serves as a powerful reminder of the impact Windsor alumni are making in the global medical community.

> *...This is a celebration of dreams realized,* ***of the countless hours spent in study and service..***

Crossword Puzzle

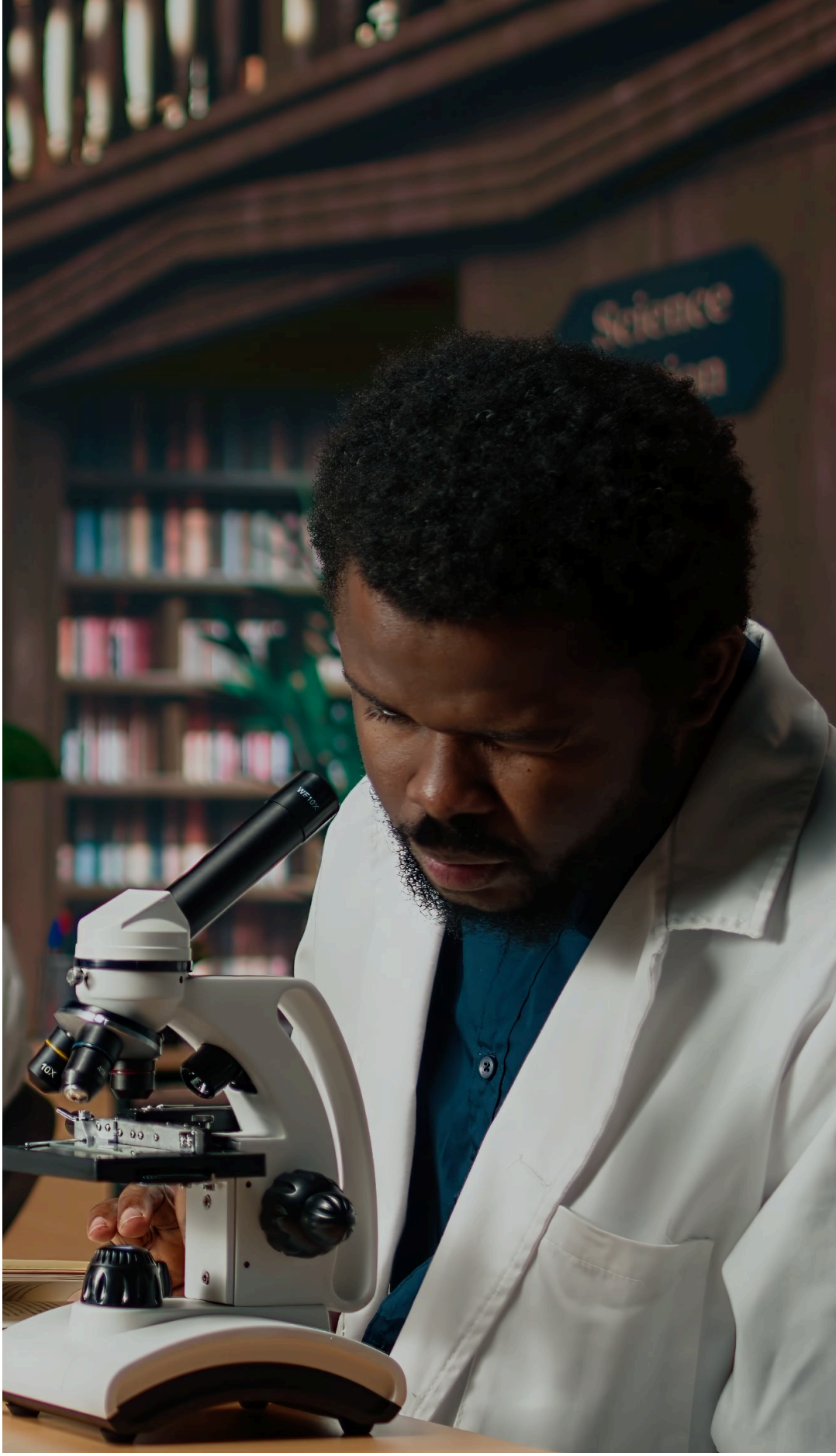


Down:

1. Medications that increase urine output
2. Stitches used to close wounds
3. Difficulty breathing
4. Inadequate blood supply to an organ
8. Imaging test for blood vessels
9. Muscular tube connecting mouth to stomach
11. Chronic pain with fatigue and tenderness
13. Postmortem examination
14. Likely outcome of a disease
16. Study of disease causes and effects
17. Condition involving abnormal cells
19. Malignant tumor in epithelial tissue

Across

5. Visual examination of internal organs
6. Formation of a blood clot inside a vessel
7. Inflammation of the liver
10. Irregular heartbeat
12. Inflammation of the voice box
15. Functional units of the kidney
18. Study of blood and its
20. Muscle pain



Research

Narrative review

Navigating Stress and Burnout in Medical Education: Uncovering Causes, Consequences and Effective Interventions

Author: Kuljit Singh Saini | **Guide:** Dr. Shree Lakshmi Devi

Abstract:

The modern medical school system presents an unexpected paradox of producing skilled health professionals while concurrently exposing students to high levels of stress, pressure, and burnout. Various factors like academic overload, financial concerns, and personal pressures contribute to stress among medical students. Medical education from decades ago is related to stress among students in the educational environment. Effects of stress in medical education such as anxiety, depression, suicidal ideation among medical students are more when compared to non-medical school students. Interventional strategies such as meditation, mindfulness, and psychoeducation are also assessed for their potential to tackle these deeply concerning issues. Pubmed was used to search for peer -reviewed, recent original article which generated an initial yield of 117,915 articles. The selected articles needed to address vital components that would be addressed in the topic such as environment, economical, academics, expectations and pressures of students, prevalence, and impact on mental and physical health.

Further research on key elements concerning interventional strategies and stress management strategies and their subsequent integration into medical curriculum are required. The ultimate goal is to bring more awareness to this discourse in order to develop an environment that not only cultivates medical expertise but also safeguards the health of future physicians. Thereby improving the care of patients and reduces the risk of clinical errors.

Key Messages

Stress among medical students escalates due to various factors on a daily basis. Although institutions take essential measures, the curriculum overload and environmental pressures significantly impact students' mental health, hindering their development into well-rounded physicians. Identifying and mitigating stress during medical training is crucial to preserving the well-being of future clinicians.

Navigating the demanding currents of the world of medicine requires more than just knowledge; it requires a deep-rooted resilience of human will. While aimed at equipping future physicians with the required skills and knowledge, it often pushes many medical students to a point of extreme stress, pressure, and burnout.

The burdening workload, high stake examinations, financial challenges and more create a high stress environment which, if not navigated properly, can lead to adverse physiological and psychological effects among students.

Furthermore, the stress and risk of burnout does not spontaneously vanish following the educational phase of the career path. Many physicians similarly experience a considerable amount of stress and burnout. In fact, physicians have a high chance of committing suicide which require more preventative efforts to mitigate. In relation to medical education, there is proof that the stress and anxiety experienced during medical school forecasts similar predicaments in future physicians. The importance of exploring and addressing these issues cannot be overstated, as the well-being of medical students directly influences their future performance as physicians, affecting patient care quality, medical errors and the overall healthcare system's efficacy.

Identifying Causative factors, manifestations, and consequences of the effects of stress and burnout amongst medical students, will direct to outline the different methods of prevention. Furthermore, by exploring the overlapping factors such as academic pressures, financial toll, personal well-being, and environment factors institutions can develop an effective strategy to foster a healthier supportive educational environment for students.

Key-words:

Medical students, Medical education, stress, awareness

These essential discussions will emphasize the need to cultivate healthier educational environments that nurtures medical expertise but also safeguards the health of those that will shape the future of medicine.

This article aims to contribute to the ongoing dialogue on enhancing medical student well-being, with the ultimate goal of fostering a healthier, more effective future medical workforce. PubMed was used to search for peer-reviewed, english language article with the keyword(s) ["medical school"&"stress"] ;["medical student"& "stress"]; ["stress prevalence' & "medical students"] which generated an initial yield of 117,915 articles. To refine this large dataset, with few filter as "clinical trial";"observational studies";"randomized control trials". These specific filters were chosen to highlight studies that provide a broad overview of existing research, as well as those offering evidence-based insights into the efficacy of interventions.

In context of recency, in order to capture the most recent research, focus was established on studies published within the last 30 years. This allowed to relate the paper to more contemporary educational practices, contemporary student experiences and more recent intervention practices.

In terms of relevance, the selected articles needed to address vital components that would be addressed in the topic such as environment, economical, academics, expectations and pressures of students, prevalence, and impact on mental and physical health. The selected articles would be needed to provide information on at least one of the previously mentioned criteria, thus ensuring that the review would yield legitimate insights into the essence of effects of stress, pressure and burnout on medical students.

Evolution of Medical Education

Medicine has been a critical societal element from the oldest societies to the most modern. Whether it was the Egyptians, Greeks, Romans, Ayurvedic or ancient Islamic societies, every society possessed a form of awareness of medicine. This progression throughout thousands of years has cultivated the contemporary medicine that most of the modern world relies upon. Whether allopathic medicine or holistic medicine, doctors have been required to undergo medical training to hone the art of medicine. Although, like the progression of medicine, the training to acquire this skill itself has also progressed substantially.

In just about 100 years, the US medical curriculum progressed from a loosely organized structure to a refined, world-renowned system yielding high quality professionals. Before the 20th century, most medical school education varied quite widely in terms of quality and content. In most cases, the education was very poor, non-standardized, and did not require the rigorous prerequisites as we see today. Apprentices were contracted for 5 to 7 years beginning at about age 13 after which they were able to practice without regulations. These circumstances lead to the conception of the Flexner Report. The Flexner report, composed by Abraham Flexner in 1910, led to the closure of many inadequate medical schools. It proposed a new system based around sciences requiring students to have completed a bachelor's degree, inception of university-grade medical school facilities, 2 years of basic sciences followed by 2 years of clinical medicine. Flexner was a major factor in establishing a link between science and medical education. As this system was adopted, it led to significant advancements in the medical environment and the Council of Medical Education of AMA was established. This council was the first to institute a set of requirements for graduate medical education. In subsequent years, many reforms were established which resulted in a significant increase in new physicians being officially certified to practice.

In a similar fashion, the American College of Surgeons (ACS) was founded in the early 20th century which sought to standardize surgical education which was otherwise taught through unorthodox means such as short unofficial courses, internships and even being self taught. More precisely, in 1937 the ACS set out a list of standards in order to regulate surgical education.

A significant progression came about in the mid 20th century at the turn of the second world war. The war saw a massive outflow of residents to support the war effort; even surgeons not yet fully equipped with required skills extended their services. Many veteran surgeons returned

, most of which wished to proceed with surgical education. This saw the establishment of relationships between VA hospitals and medical institutions which allowed students to gain more exposure to a wide range of clinical scenarios. Eventually in 1965, the United States government established the Medicare bill to fund residency programs which provided training in medical institutions under federal funding. Although these relationships augmented medical learning capabilities, there was still a need for coordinated standards for accreditation of residency program. After several failed attempts at establishing an accreditation committee, a new organization called the ACGME was conceived in 2000. This organization was successful in formulating several key initiatives and reforms that are still in play today like the Six Core Competencies, the Outcomes Project, Duty Hour Reform, the Next Accreditation System, and the Milestones Project. Albeit there were still inconsistencies within the system that needed to be addressed. The Josy Macy Jr. Foundation, the only organization dedicated to improving the education of healthcare professionals, reported that despite having massive funding from the federal government, there was still no system in place to assess the readiness of health professionals. The organization noticed a fixation of the medical school system on time-based training as a proxy for competency. Rather, they suggested a focus on a competency based medical system. This system would gauge the readiness of a medical professional based on the individual's mastery of a set of nationally endorsed competencies and the fulfillment of national standards rather than qualifying readiness by relating it to an amount of years. This system is called competency-based medical education (CBME) which has been tested, tried, and adopted in most parts of the country.

After acknowledging the evolution of medical education, it is more than evident that the constraints and requirements have been significantly expanded since the early days of medical education. Beginning as a loosely regulated system, medical education quickly acquired new traits to increase the quality and integrity of physicians and to improve patient care. In comparison to the education quality at the turn of the 20th century, today's education differs vastly. Criteria and competency were foreign terms until the Flexner report and even then, it required more effort to push the system to the levels of efficiency seen today. Along with the gained efficiency, it is noticeable that students in the current medical system are more confident and comfortable than in the early 20th century.

Compared to a loose, randomized learning system, the current education system is well organized, student-centered, competency-based system in order to achieve the status of a medical professional. Along with these refinements, the academic stress has greatly increased on medical students.

The contemporary journey to becoming a well-versed physician subjects' student to a comprehensive curriculum based on core competencies and standards. Constant improvements to the curriculum have morphed the 4–6-year experience into two distinct portions; pre-clinical years and clinical years. The preclinical years give focus to basic sciences and foundational medical knowledge that include courses like Anatomy, Physiology, Biochemistry, Pharmacology, Pathology, Ethics, patient-physician relationship, communication skills, interprofessional education, and more. Students' knowledge is tested by traditional multiple-choice-type questioning and grades are distributed either based on GPA, numbered grade average or by letter grade.

The clinical years focus on applying the basic knowledge in clinical settings. It gives students the opportunity to explore different specialties by rotating through the specialties. These rotations are hands-on, and students are supervised by experienced physicians. As noted in this paper, a key component of the stress related to medical school arises from the constant assessments and extensive breadth of knowledge concerning medicine. Students are assessed via objective exams, written papers, OSCE, OSPE, projects, portfolio and workplace-based assessments. These examinations and assessments require students to maintain a relatively quick pace in terms of trying to grasp the required knowledge.

In fact, in many cases the difficulty of assessments and sheer amount assessments heavily burden medical

students resulting in the acute and chronic symptoms. Additionally, most countries have established organizations to assess physicians' aptitude and licensing accordingly. In the US, the United States Medical Licensing Examination (USMLE) requires each physician to undergo a three-step examination for medical licensure. The first two steps are typically taken during medical school, with the third step taken after graduation, during residency. Matching into residency programs is facilitated by the National Resident Matching Program (NRMP), which uses scores from the USMLE, among other factors.

The goal of most US medical students and some IMG students is to pass these specific USMLE examinations and subsequently match into residency programs of their interest. Throughout the whole medical journey, these contribute heavily to the stress experienced by students as it is a constant shadow casting itself over students.

Stress Among Medical Students

It is undoubtable that Medical students experience a considerable amount of stress unlike any other career path. While it may be a fruitful venture, medical school students perceive higher levels of stress than most normal people. These findings are analogous with a study conducted at an American university that aimed to assess the distress among medical students in comparison to the general population. The study by Firth J. Levels; 1986 established that the level of distress among the students was so high that 15-20% qualified for a psychiatric illness diagnosis.

Though there are many factors contributing to the augmented levels of stress amongst students, one of the key factors is academic expectations. Many students quote having little to no time for leisure and spending most of their time either studying or stressing about academic performance. The vast amount of content that a medical school student is expected to absorb adds to the feeling of stress. In many instances, when students have free time, instead of indulging into relaxing activities, the stress guilts them into using the time effectively to study which further adds to the possibility of burnout. This further supports the fact that academics and medical school have become the main domain of their life thus neglecting all other domains of life.

In fact, in research study by Bergmann C et al,2019 conducted in Germany; a student admitted that he had to take eleven exams in his semester which left him completely exhausted adding to the fact that he could not eat or even sleep during those dayas which left him confabulated. Medical students also face a considerable amount of financial pressure which can be related to high cost of tuition and the associated costs of medical school. Although this stress has become very apparent, tuition is increasing to meet global inflation. According to the National Center for Education Statistics, the total loan debt taken on by medical students at the time of graduation has more than doubled over the last decade from an average cost of $108,000 in 2003 to $223,000 in 2016 after adjusting for inflation. The stress of securing such loans compounds on top of the sheer cost of tuition which creates scenarios where students are constantly worried about both academic performance and financial stability. sacrifices taken to afford medical school can actually heighten their levels of stress since failure would not only mean a personal setback but will most likely conceive a financial disaster. In fact, a study in Saudi Arabia has shown that their native students experience a decrease in stress over the years versus US medical schools where stress seemingly only increases as the years pass 14,15

.The study in Saudi Arabia employed the use of the Kessler 10 (K10) Psychological Distress Inventory to assess stress levels in students categorizing them as none, mild, moderate, and severe. The prevalence of stress was then evaluated and compared with key variables such as gender, year of study, academic performance, debt, consistency of course attendance and self-reported physical issues.

The sum result of this study was then taken and contrasted against studies from other countries such as Thailand, Egypt, Malaysia, Britain and the US. The results of a North American study showed that mental health worsens after joining medical school and worsens as they progress. Researchers in Saudi Arabia attributed the apparent decreased levels of stress of their students to many possible reasons, one of which citing the fact that the medical education is free of charge in the government funded medical schools. In other countries like the United Kingdom, students are burdened with financial worries.

Author: Kuljit Singh Saini
Guide: Dr. Shree Lakshmi Devi

Along with the many stressors that come with this path, the financial burden only adds another layer which can ultimately result in burnout.

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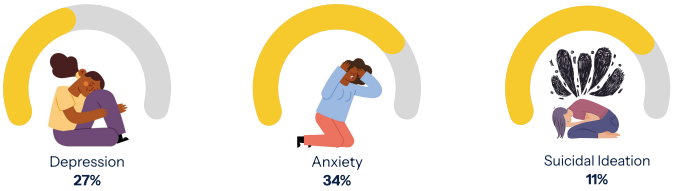
Medical Students and Mental Health

It is acknowledged that medical students foster a higher level of anxiety, depression and mental health issues than non-medical students of equal age. Globally, the rates of depression among medical students is at an estimated 27%, anxiety at 34% and suicidal ideation is at an alarming 11%. As mentioned earlier, many factors contribute to these emotional statuses such as academics, environmental factors, financial factors, social factors and personal factors. In response to deteriorating mental health, it is evident that it must be addressed promptly in order to avoid an adverse outcome. However, there are many barriers that keep medical students from accessing help.



In fact, the burden of cost was again revisited. The high cost of tuition and other related expenses may lead students to defer help. Another key barrier that was explored was the fear of lack of confidentiality. In a study conducted at the School of Medicine at the University of California, 37% of students cited lack of confidentiality as a key factor and 24% cited fear of documentation. Students feared that the mental health practitioners may reveal their health status to future residency programs thus hindering their ability to secure a spot. They also fear that disclosing their mental health status may hinder their reputation or academic status.

Another possibility is that, despite being trained, they are unable to detect mental health problems, leading to their oversight. On the contrary, some individuals may recognize their need for help but overlook it intentionally due to a stigma around seeking help for mental health issues. A study by Schwenk TL et al, 2010 showed that 30% of first and second year preclinical students cited stigma as the main factor for not seeking help.

Last but not least, a key mediator in the lack of effort concerning seeking mental healthcare is time. In the same study conducted at the School of Medicine at the University of California, 48% of students cited the lack of time as a barrier to utilizing mental health services. As mentioned several times already, the lack of time plays a critical role that not only is the precursor of mental health issues but also the key player that does not allow students to address the problems it creates.

Exhaustion and Coping Stragtegies Globally

Burnout is regarded as a measure of distress in three areas of any certain profession: emotional exhaustion, emotional estrangement, and a low sense of personal fulfillment. According to Frejerman et al. the worldwide prevalence for burnout among medical students is slated at about 44%. This is just one aspect of the complex effects of the medical curriculum. Such research is crucial to understanding the intricacy of experiences encountered by medical students which has deep implications and applications that directly impact healthcare. Not only does tackling the issue of stress amongst medical students help future physicians but also produces a positive outcome for patients. Therefore, aiding more awareness of such situations can help create more dialogue around the dire need for interventions amongst medical students.

In a cross sectional study performed at Shifa college of medicine in Islamabad, it was noted that 82% of final year medical students experienced moderate to high amounts of stress. However, after implementation of interventions consisting of meditation, psycho-education and more, most participants graded their stress as moderate rather than high. In fact, a difference was noted in just one month after implementation. A study performed in medical schools at Italy noted similar effects after intervention that included online integral meditation classes, dietary advice followed by short yoga classes.

Another study performed in Italy medical school noted similar effects of an intervention that included online integral meditation classes, dietary advice followed by short yoga classes. Specifically, the intervention proved successful in lowering perceived stress, enhancing mental well-being, increasing emotional regulation, increasing resilience, diminishing mind wandering, enhancing attention maintenance, and decreasing overall distress. Therefore, by understanding the factors discussed thoroughly in this research paper, medical authorities can implement coping techniques that are necessary to produce capable physicians. In fact, the well-being of physicians and future physicians is a factor that can be indirectly attributed to clinical errors and misdiagnosis. Consequently, improving the health of medical students, whether mental or physical, can be key in reducing such errors and misdiagnosis in future clinical practice.

Although the acute effects of interventional techniques have been investigated, further research in this field is needed to understand the long-term effects of stress management/intervention techniques and their impact on future clinical practice and patient healthcare. Innovation in the field of stress intervention is required and their subsequent integration into the medical curricula is vital however, it remains a challenge for many universities. In addition, exploring technologically inclusive interventions can prove useful along with peer supported systems to avoid burnout related to stress and pressure. Moreover, a substantial gap exists in understanding the perception of stress among students of different socioeconomic, educational, and cultural backgrounds triggering the need for more inclusive research to initiate the creation of more effective stress management solutions.

Conclusion

The review underlines the significant effects and causes of stress, pressure and burnout among medical students while emphasizing the need for continued research.

Medical school education coupled with factors such as financial factors, high stake exams, constant pressure to study, and limitations to getting proper mental healthcare exacerbates stress, pressure, and burnout among students. Not only do these factors affect them physically, psychologically, and mentally but also can be key factors leading to critical error in future medical practice.

Stress among medical students can lead to mental health issues, including anxiety, depression, and even suicidal ideation, indicating a dire need for effective interventions and support systems within medical education. Various research point out the effectiveness of various interventional strategies such as meditation, mindfulness, yoga, psycho education and dietary changes and their adaptation into the medical curriculum which can prove extensively beneficial for students and their future in medicine.

Further research studies must be extended to include long term effects of stress management and its integration into the medical environment. Thus, aiming to provide an outlet for current medical students and ensure efficiency of future doctors. Effectiveness in the present will only foreshadow effectiveness for the future.

Aakash Gandhi

Cancer Cachexia.

Windsor University School of Medicine is happy to showcase the impressive research career of Aakash Y. Gandhi, a clinical student whose previous scholarly interests include molecular metabolism, cancer cachexia, and infectious disease. Aakash has shown continued dedication to advancing our understanding of disease at the intersection of cellular biology and clinical practice.

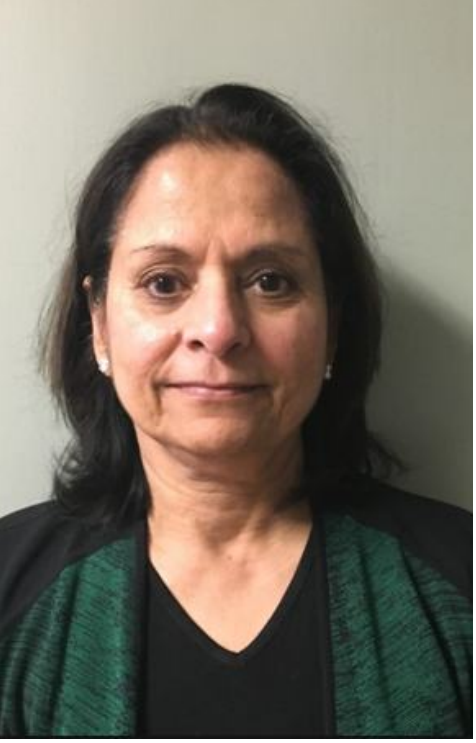
Prior to enrolling in WUSOM, Aakash obtained a M.Sc. in Cell & Molecular Biology from UT Southwestern Medical Center in Dallas, TX. His main focus for this degree was on the mechanisms underpinning cytokine-mediated adipocyte lipolysis that is relevant to cancer cachexia and obesity. Aakash, during his time working under the mentorship of Dr. Rodney E. Infante and Dr. Puneeth Iyengar, was able to demonstrate that IL-6 family cytokines exploit JAK/STAT3 signaling to increase adipocyte lipolysis through activation of ATGL and CGI-58 (PMID 35785158), which represented an important point of insight into the metabolic dysregulation that is often present in diseases of chronic inflammation.

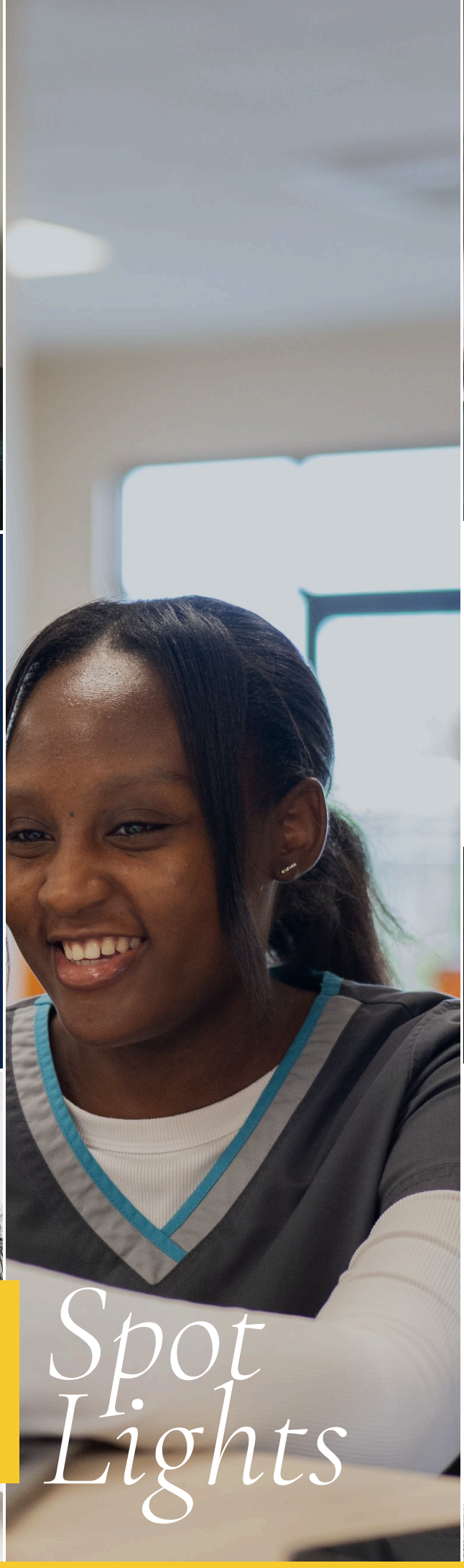
In addition to this first-author publication, Aakash has contributed to several important publications that have stemmed from his work with Dr. Infante and Dr. Iyengar, such as a publication in JCI Insight detailing the role of STK11/LKB1 tumor suppressor mutations in cachexia (first identification of genetic variants causing cachexia, represents important translational potential of their work). He has also contributed on work to novel mechanisms and potential therapeutic targets on metabolic and inflammatory disease published in iScience and JCSM-RC, and his mentors have shared this work at conferences including Digestive Disease Week of the American Gastroenterology Association, which speaks to the importance of his work on the scientific community.

Aakash began his research career at Washington University in St. Louis, where he studied the mechanisms behind antimalarial drug resistance in Plasmodium falciparum. This work, performed while under Dr. Audrey Odom John, contributed to a manuscript characterizing phosphofructokinase forms and revealed the genetic basis of metabolism plasticity in malaria parasites, a stellar background for his future efforts in metabolic disease.

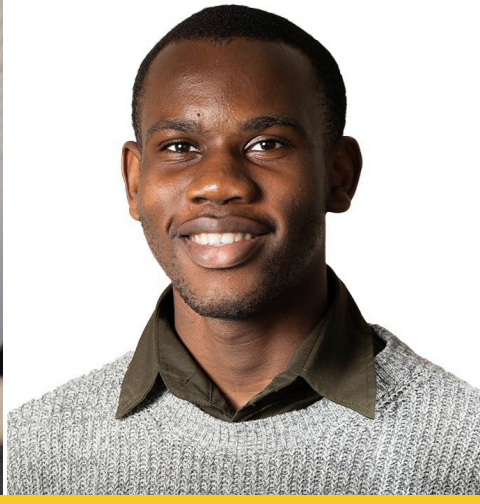
Along with his research efforts, Aakash has exhibited leadership in mentoring, curriculum development, and advocacy for diversity. He co-founded UTSW's MSTP READI (Respect, Equitability, Accountability, Diversity and Inclusion) Committee and mentored undergraduates through the American Physician Scientist Association (APSA).

Aakash exemplifies the physician-scientist ideal, with a solid foundation in bench science and clinical medicine. His work will continue to impact how we perceive the metabolic consequences of chronic disease and an understanding of how targeted strategies could inform future therapies. Aakash is currently applying for both categorical and research-track residencies during the 2025-2026 academic year and wishes to follow in his mentors' footsteps into a career as a physician-scientist (AAMC 13470256).



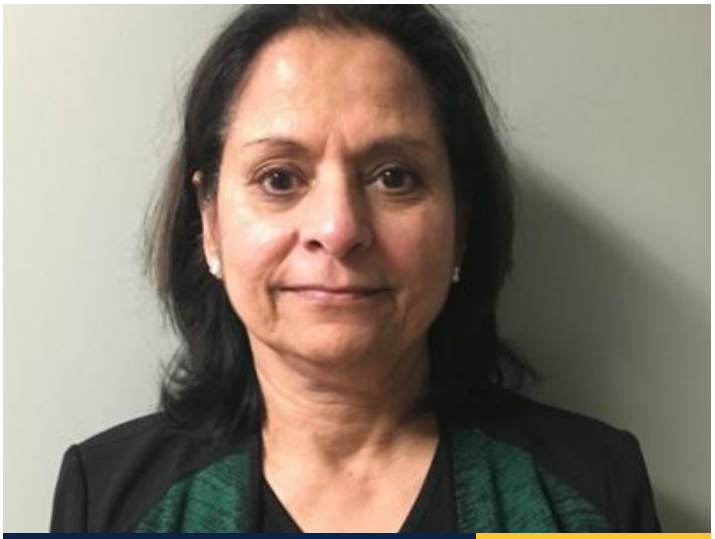


Spot Lights



Faculty Spotlight Spotlight on Academic Excellence:

Few educators embody the depth of dedication, mentorship, and legacy as profoundly as Dr. Subhash Popli. With over four decades of clinical, academic, and research excellence and an unwavering commitment to student development, Dr. Popli has become an indispensable pillar of the Windsor **University School of Medicine community.**



Dr. Subhash Popli, MD

Clinical Dean | Windsor University School of Medicine

Since joining Windsor as Clinical Dean in 2015, Dr. Popli has played an instrumental role in shaping the clinical training landscape for aspiring physicians. She is a central figure in the orientation of clinical students entering MD6, preparing them with both the knowledge and the professionalism required to thrive in hospital settings.

A master educator in internal medicine and nephrology, Dr. Popli delivers foundational lectures on topics such as acid-base disorders, glomerulonephritis, nephrotic syndrome, hypertension, diabetes, and electrolyte imbalance.

She also collaborates closely with Dr. Penna on team-based learning (TBL) sessions, fostering an interactive environment where students develop diagnostic reasoning and clinical confidence.

Beyond the classroom, Dr. Popli's impact is deeply felt through OSCE skills training and assessment, where she provides individualized coaching to enhance students' physical exam techniques and communication skills. She is actively involved in accreditation visits, hospital site reviews, graduation ceremonies, and campus engagement activities, always offering her time, wisdom, and encouragement. Equally important is her mentorship of students interested in internal medicine residencies.

Many Windsor graduates credit Dr. Popli's guidance as a decisive influence in their career paths, noting her mentorship as both rigorous and deeply human.

Prior to her time at Windsor, Dr. Popli served as Professor of Medicine at Loyola University and Section Chief of Nephrology at Hines VA Medical Center. She is board certified in both Internal Medicine and Nephrology, a Fellow of the American College of Physicians, and a recipient of several teaching honors including the Teacher of the Year Award and the Bronze Apple Award in education.

Whether she is preparing a student for their first clinical encounter or reviewing renal pathology with the nuance only decades of experience can offer, Dr. Popli exemplifies the values of scholarship, service, and mentorship. We are honored to recognize her contributions in this issue of the Faculty Spotlight and prouder still to call her part of our Windsor family.

Faculty Spotlight

Spotlight on Academic Excellence:

Dr. Shree Lakshmi D.
Singaravelu, MBBS, MD, PhD

Windsor University School of Medicine is proud to spotlight **Dr. Shree Lakshmi D. Singaravelu,** an accomplished physician, educator, researcher, and academic leader whose contributions have significantly advanced the university's academic and research missions. Since joining WUSOM in February 2022, Dr. Singaravelu has brought over 15 years of extensive experience in medical education, clinical pharmacology, curriculum development, and institutional leadership.

Dr. Singaravelu earned her MBBS from The Tamil Nadu Dr. M.G.R. Medical University in 2007 and went on to complete her MD in Pharmacology from Annamalai University in 2011. Her academic pursuits continued with a PhD in Pharmacology from Bharath Institute of Higher Education and Research and an M.Phil in Health Professions Education from Sri Balaji Vidyapeeth. In addition, she holds several professional certifications, including Essential Skills in Medical Education (ESME) from AMEE, Clinical Research, and advanced training in pharmacovigilance. Before joining WUSOM, she served as Professor and Chair of Pharmacology at Shri Sathya Sai Medical College and Research Institute in Chennai, India, where she led curriculum reform, mentored faculty, and established high-impact research and educational initiatives. She also held faculty positions at institutions in India and Mauritius, with a consistent focus on integrating innovative teaching methods and advancing student success. At Windsor, Dr. Singaravelu currently serves as Associate Dean of Research and Professor of Pharmacology, where she has taken a central role in shaping the university's research culture.

Dr. Shree Lakshmi D. Singaravelu, MBBS, MD, PhD

Professor of Pharmacology & Associate Dean of Research – Windsor University School of Medicine

She designed and implemented a research education curriculum for the MD program, mentors students in research design and scientific writing, and conducts faculty development programs in research methodology, publication ethics, and grant writing. She also chairs the Research and Research Education Committee, is an active member of the Curriculum Evaluation Committee, and contributes to student advisory programs and institutional review activities.

Dr. Singaravelu is a prolific scholar with over 25 peer-reviewed publications, including in PubMed-indexed and Scopus-indexed journals, and has presented at numerous international conferences, including AMEE 2023 in Glasgow. Her research spans topics such as pharmacovigilance, tuberculosis treatment adherence, medical education, phytotherapy, and thyroid cytology. She has also authored chapters in medical textbooks and holds multiple copyrights for innovative teaching methodologies, such as the Hide & Seek Teaching Method (HSTM) and the STARS (Short Tubercular Drug Adherence Rating Scales) model.

In addition to her research and teaching, Dr. Singaravelu is known for her student-centered approach, dynamic teaching style, and dedication to creating inclusive, interactive, and evidence-based learning environments. Through programs like PASS (Pharmacology Additional Support for Students) and executive certificate courses in pharmaceutical sales and pharmacovigilance, she actively works to close learning gaps and empower students for success.

Her leadership, innovation, and unwavering dedication to academic excellence continue to inspire both students and faculty at Windsor University School of Medicine. Dr. Singaravelu is not just an educator—she is a visionary shaping the future of global medical education. Equally important is her mentorship of students interested in internal medicine residencies. Many Windsor graduates credit Dr. Popli's guidance as a decisive influence in their career paths, noting her mentorship as both rigorous and deeply human.

Prior to her time at Windsor, Dr. Popli served as Professor of Medicine at Loyola University and Section Chief of Nephrology at Hines VA Medical Center. She is board certified in both Internal Medicine and Nephrology, a Fellow of the American College of Physicians, and a recipient of several teaching honors including the Teacher of the Year Award and the Bronze Apple Award in education.Whether she is preparing a student for their first clinical encounter or reviewing renal pathology with the nuance only decades of experience can offer, Dr. Popli exemplifies the values of scholarship, service, and mentorship. We are honored to recognize her contributions in this issue of the Faculty Spotlight and prouder still to call her part of our Windsor family.

Spotlight Isaac Hart

Isaac Hart is a motivated and hardworking medical student at Windsor University School of Medicine, whose journey reflects a unique combination of academic dedication, creative artistry, and practical work experience. With a strong work ethic and the ability to excel both independently and collaboratively, Isaac has consistently demonstrated his commitment to learning, process improvement, and meaningful contributions to the Windsor University community.

Academic Background

Isaac began his medical education at Afe Babalola University in Nigeria before continuing his studies in Medicine and Surgery at the International European University, Kyiv, Ukraine, where he is currently enrolled. His academic path reflects persistence, adaptability, and a drive to pursue excellence in medical education despite challenges.

Professional Experience

Before advancing in medicine, Isaac gained valuable work experience as a Loader and Unloader at Inpost in Krakow, Poland. There, he:

- Inspected and verified shipment quality and accuracy.
- Lifted, loaded, and transported packages weighing up to 30 kilograms.
- Operated warehouse systems and adapted quickly during technical downtimes.
- Ensured compliance with state and federal shipping regulations.
- Engaged professionally with customers, supervisors, and colleagues, strengthening organizational efficiency.
- Safely operated forklifts and pallet jacks, maintaining warehouse machinery.

This role sharpened his organizational, communication, and teamwork skills while instilling resilience and adaptability—qualities he now brings to his medical training.

Creative and Technical Skills

In addition to medicine, Isaac is a talented digital illustrator with proficiency in 2D design, visual art creation, and photo editing. Skilled in Adobe Illustrator, Canvas, and printing techniques, he combines creativity with precision. He believes his artistic skills have direct application in the medical field—particularly in breaking down complex concepts into simplified, memorable illustrations and visual learning aids for students.

Personal Qualities

- Organized and detail-oriented, with a meticulous approach to both study and work.
- Energetic and self-directed, able to thrive in autonomous roles while contributing meaningfully to group projects.
- Strong communicator, with public speaking skills and a track record of effective collaboration.

Vision

Isaac's goal at Windsor University School of Medicine is to merge his background in medicine with his creative expertise in digital illustration to enhance medical education. By producing simplified, visually engaging content, he aspires to make complex medical concepts more accessible for his peers at Windsor and for future learners in the wider medical community.

Spotlight Akinola, Oluwatobi Precious

Akinola Oluwatobi Precious is an ambitious and dedicated undergraduate student of Anatomy at the University of Ilorin, Nigeria. With a strong academic background, hands-on clinical exposure, and a passion for continuous learning, Oluwatobi is steadily building a foundation for a future career in the medical sciences, with the goal of furthering her studies at Windsor University School of Medicine to advance her training and broaden his impact in the field.

Academic Journey

Oluwatobi began her formal education at Briggs Gate Nursery and Primary School (2007–2013), earning her First School Leaving Certificate. She went on to complete her secondary education at the Nigerian Navy Secondary School (2013–2019), where she obtained the West Africa School Certificate.

She then pursued Advanced Level Studies at the University of Ilorin Mini Campus (2019–2020), before enrolling in the B.Sc. Anatomy program at the University of Ilorin in 2020, where she continued her studies with commitment and enthusiasm. Building on this strong academic foundation, she is currently a student at Windsor University School of Medicine, where she is advancing her medical training and expanding her knowledge in health sciences.

Volunteering Experience

In 2022, Oluwatobi served as a Medical Assistant at Mercy Gate Hospital in Lagos, Nigeria. During this role, she:

- Recorded patient details for proper documentation and reference.
- Monitored and documented patient illnesses and possible remedies.
- Assisted in keeping track of test results and medical records.
- Supported physicians and nurses in addressing patients' needs and delivering quality care.

This volunteer experience not only provided him with practical clinical exposure but also deepened her compassion for patient care and teamwork within healthcare environments.

Skills and Qualifications

- Language: Proficient in English with distinguished levels in listening, speaking, reading, and writing.
- Computer Proficiency: Skilled in Microsoft Word, Excel, and PowerPoint for documentation, analysis, and presentations.
- Interpersonal Skills: Strong communication, teamwork, and attention to detail, with a willingness to learn and adapt in dynamic environments.

Career Interests & Hobbies

Beyond academics and healthcare, Oluwatobi enjoys creative and recreational pursuits, including singing, reading, playing musical instruments, and table tennis. Her diverse interests reflect a well-rounded personality that balances intellectual development with personal growth.

Mentorship

Oluwatobi benefits from the guidance of Dr. S.A. Ekundayo, Medical Director at Mercy Gate Hospital, who serves as her mentor and professional reference.

Spotlight

A Beacon of Excellence: Honoring the Journey of Shenelle Bridget Menezes

Shenelle Bridget Menezes

In the highly competitive world of medical education, few journeys stand out as remarkably as that of Shenelle Bridget Menezes, a graduating student at Windsor University School of Medicine. Her path is one of academic excellence and compassionate leadership, a shining example of the integrity, intellect, and innovation that define the future of medicine.

Since the start of her medical education, Shenelle established herself as a top performer. She earned the prestigious Dean's List for Academic Excellence in all four of her foundational trimesters, consistently ranking first in her class. This sustained academic brilliance not only reflects her intellectual rigor but also her discipline and resilience.

Her academic caliber was further solidified when she achieved a remarkable 270+ score on the USMLE Step 2 CK. Recognizing the challenges students face in preparing for such a rigorous exam, Shenelle generously dedicates her time to tutoring fellow students, offering strategic guidance and mentorship to help them reach their own peak performance.

Shenelle's success isn't limited to her studies. She was the AMSA Vice President, where she organized free community clinics, blood drives, and hands-on clinical workshops. Not only did these activities provide much-needed medical care to the general population, but they also provided her fellow students valuable real-world clinical experience. Through these initiatives, she demonstrated a deep commitment to healthcare education and community well-being.

Moreover, Shenelle is an Ambassador for Project IMG, which reflects her dedication to mentorship and support for international medical graduates. Her passion for learning and critical discourse also led her to become Vice President of the Biomarkers Club, which served as a platform for her to host a series of intellectual events ranging from "lunch and learn" seminars to debating competitions. These activities cultivated a culture of inquiry and intellectual curiosity among her peers.

Shenelle continued to lead and serve at Windsor University School of Medicine with the same passion and dedication. She served as an Academic Officer in the Student Government Association (SGA), where she voiced the academic concerns of the student body and collaborated with faculty to address challenges and enhance academic life efforts that play a critical role in shaping the student experience and supporting professional development. Shenelle's initiative does not stop with clinical programming. Her participation in creating NBME shelf review materials has also been very beneficial to other students preparing for crucial exams.

Shenelle is also a co-author of a peer-reviewed adult-onset Bartter syndrome case report that was published in Cureus. She has also worked as a contributor to the Reproductive Health Brick series on ScholarRX, a valuable tool that integrates legal and medical perspectives on reproductive medicine. She is currently a part of a publication cohort at Windsor University School of Medicine, continuing her exposure to medical research and academic publishing.

Board certified in ACLS, BLS, HIPAA, and NIH as well as AMSA advanced modules, Shenelle's credentials bridge both public health and clinical practice. Volunteer work for cancer awareness and patient support programs further demonstrate her commitment to service, translating knowledge into practical community service.

Aside from her studies and work, Shenelle also possesses an artistic nature. A trained pianist, she possesses a Grade 4 Trinity Guildhall qualification, and she enjoys cooking. Her ability to balance a strong scientific mindset with creative pursuits reflects the empathy and thoughtfulness she brings to medicine.

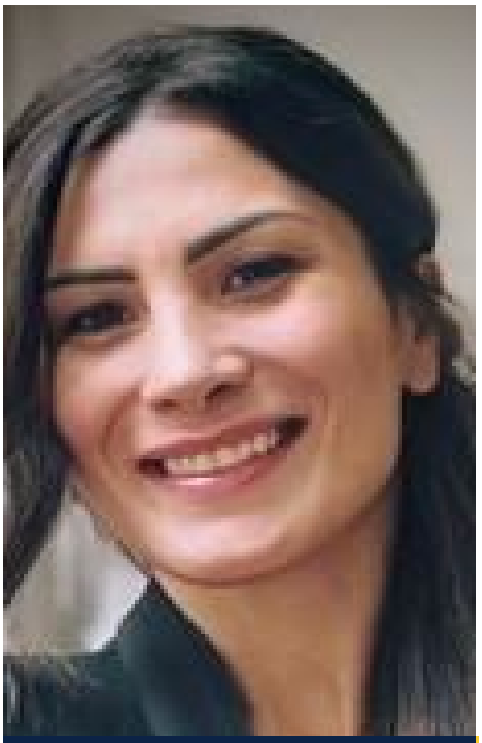
As she prepares to graduate in April 2026 with a Doctor of Medicine degree, Shenelle Bridget Menezes stands as a model of academic distinction, compassionate service, and purposeful leadership.

She is currently preparing for her Internal Medicine residency application for the 2026 cycle, bringing with her a strong foundation of clinical excellence, research experience, and a deep commitment to patient care. Her journey continues to inspire a generation of students who aim not only to succeed, but to serve with integrity and heart.

— Windsor Insight Editorial Team

Spotlight

Empowering Through Compassion and Policy: The Global Impact of Filiz Ozmisir, NP-Primary, MN, MPP



Dr. Filiz Ozmisir

Bridging Medicine, Policy, and Global Humanitarianism

In a world where access to healthcare, education, and dignity is still a privilege for many, Dr. Filiz Ozmisir stands out as a transformative force; uniting clinical medicine, public policy, and global advocacy to improve the lives of marginalized populations. A physician-in-training at Windsor University School of Medicine, a licensed family nurse practitioner in Canada and the U.S., and the founder of Refugee Girls Worldwide, Dr. Ozmisir embodies the intersection of medical expertise and social justice.

A Unique Path: From Clinical Practice to Global Leadership

Dr. Ozmisir's professional journey is deeply rooted in a commitment to human-centered care and equity. With dual Master's degrees in Nursing (MN) and Public Policy (MPP), and a background in both primary care and legislative reform, she integrates scientific rigor with empathetic service. Her clinical focus emphasizes meaningful relationships with patients, which has served as a foundation for her later work in education reform, refugee health, and women's empowerment on a global scale.

Before enrolling at Windsor University School of Medicine in 2021, Dr. Ozmisir held faculty positions at the University of Toronto's Munk School of Global Affairs, where she developed and taught the graduate-level course "Social Context of Policy Making." Her policy work with the Ontario Ministry of Health contributed to major regulatory changes, including Bill 87, the Protecting Patients Act. She holds multiple degrees from the University of Toronto, including a Bachelor of Nursing, a Bachelor of Psychology (with distinction), and a Master's in Public Policy, where she received the prestigious MPP Fellowship Award.

Refugee Girls Worldwide: Education as a Vehicle for Empowerment

As the founder and CEO of Refugee Girls Worldwide, Dr. Ozmisir has led award-winning initiatives across Pakistan, Turkey, and Afghanistan—focusing on education, maternal health, and economic independence for displaced women and girls. Under her leadership, the organization has accomplished several significant milestones:

- Built and Operated Five Schools serving over 2,500 Afghan refugee girls in Nowshera, Pakistan.
- Established a Primary Care Clinic (Atock Clinic), offering services to over 50,000 patients.
- Launched Inclusive Programs including a Deaf Children Empowerment Program and vocational training for refugee women.
- Led Emergency Relief Efforts, such as PPE distribution during COVID-19 and a nationwide campaign in Canada to build container homes for 100 families displaced by the 2023 earthquakes in Turkey.

Dr. Ozmisir's model prioritizes sustainability, local engagement, and long-term impact. "Education is not just a right," she states.

"Education is not just a right. It is the most powerful tool for freedom and self-determination. When you educate a girl, you change her family, her community, and her future."

A Voice on the Global Stage

Despite the demanding pace of her medical training at Windsor, Dr. Ozmisir remains a sought-after speaker and thought leader. She has delivered keynote addresses at major international conferences, including:

- The Global Health Conference at the University of Toronto (2021, 2022)
- The International Rural Nursing Conference in Tennessee (2023), where she addressed rural health equity and refugee access to care
- UNHCR Partner Panels and Civic Forums, contributing to discourse on girls' education and inclusive policy
- University-based Initiatives, where she mentors young leaders and future medical professionals

Her work bridges grassroots realities with institutional change, offering a rare blend of insight from both the field and the policy table.

Values that Inspire

Dr. Ozmisir's work is guided by unwavering values that shape her every initiative:

- **Dignity First** – Humanitarian work must be grounded in respect, collaboration, and inclusivity—not charity or pity.
- **Refugees Are Opportunities** – Displaced populations bring resilience, skills, and potential.

Empowering Through Compassion and Policy:
The Global Impact of Filiz Ozmisir, NP-Primary, MN, MPP

- **Education is Power** – Every girl deserves the chance to rise, regardless of circumstance.
- **Accountable Service** – True change begins with self-awareness, transparency, and shared responsibility.

"You have the power," she reminds her students and peers. "Change begins with how you see the world—and how you choose to serve it."

Looking Ahead: Scaling Impact

As she enters her final year of medical training, Dr. Ozmisir continues to build new initiatives through Refugee Girls Worldwide, including:

- Launching Satellite Education Centers in Azad Kashmir
- Advocating Trauma-Informed Pedagogy in refugee learning systems
- Expanding a Global Volunteer Network of medical, policy, and education professionals

A Role Model for a New Generation

Dr. Filiz Ozmisir is more than a physician or policy leader. she is a role model for immigrant, refugee, and underserved communities worldwide. As a mother of twins and a first-generation immigrant herself, she understands the complexities of navigating and transforming broken systems. Her trilingual fluency in English, Turkish, and medical language allows her to bridge cultures and serve as a catalyst for change.

Whether in a refugee camp, a clinical setting, or an academic forum, Dr. Ozmisir's mission remains clear: to uplift, to heal, and to lead with purpose.

Closing Thoughts

At a time when global crises often feel overwhelming, Filiz Ozmisir offers a powerful reminder that meaningful change begins with vision, compassion, and commitment. Her story is not only one of medical care and humanitarian outreach but a story of how dignity, purpose, and shared humanity can create a better future for all.

As a nurse practitioner, policy leader, educator, and global advocate, Filiz continues to lead with authenticity and purpose. Above all, she remains a passionate believer in the transformative power of every girl to rise, thrive, and lead.

Spotlight

Dr. Niraj Vora
MD, FAAP
Attending Neonatologist

Dr. Vora, currently residing in Austin, Texas, originally hails from Ahmedabad, Gujarat, India. Having embarked on a journey that led him from Schertz, TX, to the University of Texas at San Antonio for his undergraduate studies, Dr. Vora pursued his passion for medicine at Windsor University School of Medicine in St. Kitts and Nevis after receiving early acceptance.

His dedication to the medical field continued with a pediatric residency at Metro Health Medical Center, Case Western Reserve University in Cleveland, OH, supplemented by training at Cleveland Clinic. Notably, he earned the esteemed "Good Fellow Award" upon completing his residency. Dr. Vora further honed his expertise through a Neonatal-Perinatal Medicine fellowship at Baylor Scott & White Health Texas A & M Health Science Center in Temple, TX. During this period, he garnered multiple research travel awards and grants, presenting his work at esteemed national conferences, including the American Heart Association (AHA) Symposium of Hypertension, American Federation of Medical Research, Pediatric Academic Society, and American Academy of Pediatrics.

Currently serving as the Fellowship Program Director for Neonatology Fellowship at Baylor Scott and White Medical Center, Dr. Vora has also held the position of Medical Director for the Neonatal High- Risk Follow-up Clinic. Beyond these roles, he contributed to the United States Air Force Reserves as a Flight Surgeon with the 433rd Aerospace Medicine Squadron in Lackland, San Antonio, Texas.

Dr. Vora's commitment extends to mentoring undergraduate students from UT Austin, UT San Antonio, Texas A & M School of Medicine, and Johns Hopkins University, guiding them to prestigious medical schools. His passion for mentorship is evident in his successful guidance of medical students from various American universities and International Medical Graduates, aiding them in securing coveted positions in preferred programs. Dr. Vora's unwavering dedication lies in mentoring aspiring medical professionals to fulfill their dreams of matching into their preferred residency programs.

Events

Windsor University Movie Night/Food Fest

On June 21, 2025, Windsor University School of Medicine hosted a lively Movie Night & Food Fest that brought the campus together for a much-needed study break. Students, faculty, and friends gathered under string lights to watch a crowd-pleasing lineup while tasting plates from student booths—savory bites, sweet treats, Caribbean & African favorites, and global flavors. Laughter and music drifted across the lawn as classmates snapped photos, swapped recipes, and enjoyed their time together. The evening felt relaxed, welcoming, and energizing—one of those simple, shared moments that makes the Windsor community feel like home.

Windsor University Suture Clinic

Windsor University School of Medicine's AMSA chapter hosted a hands-on suture clinic that gave students practical, confidence-building experience with wound-closure basics in a supportive, low-stress setting. Guided by faculty and senior student mentors, participants rotated through stations on sterile technique and instrument handling, knot-tying fundamentals, and common sutures practices. Students left with sharper procedural skills and clearer clinical judgment to carry into future clinical clerkships.

Windsor University Sports Day

On July 25, 2025, Windsor University's Sports Day brought out big energy and bigger smiles as students spent the afternoon diving, setting, and spiking their way through friendly rounds of volleyball. Teams mixed across students and faculty kept the games lively and inclusive, with cheers echoing from the sidelines and a few playful rematches extending into golden hour. Between matches, students refueled with snacks, swapped tips on serves and blocks, and snapped group photos under the campus banners. By the end, sand-dusted knees and sun-warmed high fives told the story: a relaxed, spirited day that doubled as a workout and a reminder of how fun it is to play together.

Basic Science Events

Students for Health

On May 10, 2025, Students for Health at Windsor University organized a community wellness outreach in St. Kitts, offering free blood pressure screenings and basic checkups to neighborhood residents. Student volunteers, supervised by faculty, rotated through stations for vitals, brief history-taking, and counseling on hypertension warning signs, medication adherence, diet, and exercise—sharing simple, take-home plans and referrals when needed. The event had an easy, welcoming vibe, with neighbors stopping by between errands, asking questions, and leaving with their numbers, next steps, and a clearer path to follow-up care.

Clinical Sciences Events

Match Day Celebration

Match day is one of the most anticipated days in the life of a medical student. It marks one of their milestones as they discover their acceptance into the field of medicine and continue their journey as a resident. Match day at Windsor University school of medicine was celebrated by students and faculty with joy and pride.

On the 21st of March 2025, students and faculty came together to share their excitement and success. It was a huge and meaningful moment for these students as international medical graduates. The strong sense of community at Windsor was evident throughout the celebration. Tears were shed as each student shed light on their own struggle, challenges and how they overcame them.

The university welcomed students to the lively decorated office, providing refreshments, music and a sense of accomplishment. Students overseas that couldn't be present were connected by Zoom, ensuring no one was left out of the auspicious celebration. Students expressed their shared tales of their tremendous dedication and journey. They thanked their peers, professors and faculty who guided till the end of their paths. Faculty members shared their heartfelt gratitude and congrats as they shared their personal experiences. Later everyone settled down for a Mediterranean feast that was provided by Windsor. The atmosphere was filled with laughter, conversation and team spirit in the air.

As the day came to an end, everyone said their goodbyes and hugged and cheers filled the room. Conversations were left to a halt with the promise of continuing in the future. It was truly a day everyone would remember in years to come. Match day celebration was not only a celebration but a reminder and bound of hope for aspiring students. This was not the end but the beginning of their journey to becoming future physicians.

OSCE Review Classes

Windsor believes practical knowledge is very essential to enhance and strengthen students' real life medical skills. At Windsor, teaching extends beyond just textbooks or lectures. They believe it is essential for medical students to approach real life patient encounters. It is important for students to learn proper communication, clinical skills, and management. Recognizing that some students struggled and lacked behind a few points, Dr.Reddy and the faculty introduced the in-person OSCE classes.

OSCE (Objective Structured Clinical Examination) classes are where clinical knowledge meets hands-on practice. Mentors guided the students on each case, discussing possible scenarios and diagnoses across a range of specialties from obstetrics to emergency medicine. Starting with basics, what needs to be improved on, what to look out for in a clinical based setting. The classes were made to be engaging and interactive. Bed side manners were practiced and refined. Students received insight on what is necessary. Role playing with standardized patients was introduced to sharpen their ability to ask the right questions, showing empathy as well as reason medically.

Constructive feedback was given after each session and what could be improved further. Students worked together, learned from each other and to use different approaches.

The OSCE classes not only help improve scores by enhancing their competence but also increase the students' confidence for reality. Windsor ensures that students feel more prepared for the upcoming examinations and become more knowledgeable on their journey to becoming a skilled physician.

First Ever Alumni Meet

Windsor university school of medicine alumni meet was a heartwarming gathering, where it brought graduates and current students together. This was a wonderful and inspiring opportunity for the Windsor community to come together and reconnect, share experiences and celebrate their journey that once started at Windsor. It was a day filled with networking, reflecting on and rejoicing, a true meeting of all those who started their careers at Windsor.

The meet started promptly at eleven on 19th of April, as everyone gathered around. The day began as faculty members shared their pride in the accomplishments of the Windsor graduates. Alumni from each range of specialty introduced themselves and talked about their personal stories. They gave insight on their career paths and routes they took to reach their current position. They discussed key matters regarding the role as well as future responsibilities as students and association. Alumni offered valuable insight on residency, application process and career transition. These conversations provided current students with Motivation and guidance, giving them a chance to seek advice, build connections and clarify any doubts they have .

The business meeting followed around noon where students were exposed to fresh perspectives and new ideas.

Beyond the formal talks, the alumni got a chance to rekindle relationships and bond back they made throughout their medical school. They reconnect with their old friends and faculty reminiscing about times before. The atmosphere was lit with celebration of camaraderie and celebration, on how far everyone had come. The alumni meet was more than just a gathering, it showed Windsor's strong sense of community and ongoing spirit.

Accreditation Day

Accreditation is one of the most significant days for a medical university, as it marks the university's dedication to high quality education and maintaining those standards and to grow. At Windsor, accreditation was the most crucial day for not only the faculty but students as well. Being accredited gives Windsor the opportunity to showcase their excellence in the medical field. The days leading up to the accreditation sure wasn't easy, the students and faculty came together from Jamaica, St.Kitts and Chicago to prepare and condition for THE day. Hours of rehearsal and practice took place, polishing presentations and refining details.

Clinical Sciences Events

The visit brought the representatives to each affiliated hospital as well as the campus back in Saint Kitts with a warm welcome from the students and faculty. It lasted from May 12th to May 23rd. The representatives were given a hearty tour of the visit sites as well as refreshments along the way. The representatives carefully reviewed Windsor academic program, the curriculum, the teaching facilities and student support services and overall learning environment.

Throughout the visit, the representatives sat down and spoke to the students and the faculties. They wanted to hear our first hand experiences at Windsor. They particularly wanted to know how students were supported and what can be improved. They were curious about all the way from our learning to the safety of the hospital sites. The students spoke with confidence and pride, individually sharing how Windsor supported their journey. The visit highlighted Windsor's efforts to strengthen academic programs, expand student support, such as the loan program and ensure that the students are on the right path to success.

The visit concluded after lunch as the representatives shared a feeling of content and satisfaction. The process reaffirmed Windsor's commitment to improving and providing a quality education and support from students around the world.

Verve 102 and the Future of Cardiovascular Gene Editing: A Review

by Isha Chitroda

Imagine if a single dose of liquid could provide a definitive cure for a fatal disease. Worldwide, countless individuals have fallen victim to atherosclerotic plaque causing diseases, despite adhering to diet, rigorous exercise, and pharmacological approaches [2]. While certain populations are at a greater risk, anyone can be vulnerable to these life-threatening diseases. Lifestyle, genetics, gender, and age are some risk factors that come into play, yet no population is completely exempt [1]. The most important aspect was to identify the possible disease causing components and modify them.

Researchers over at Verve Therapeutics are formulating a permanent solution using gene editing technology aimed at atherosclerotic cardiovascular disease. Their method targets a very potent protein known as PCSK9, which is a significant factor contributing to cerebrovascular diseases, atherosclerosis, and coronary artery diseases [4].

PCSK9 Biology

Proprotein convertase subtilisin/kexin type 9 (PCSK9) belongs to a family of proconvertase proteins. It is primarily responsible for balancing and stabilizing lipid metabolism. It regulates specifically the LDL receptor by binding to the hepatic LDL receptor and directing it to lysosome degradation [1]. The heart is fueled by high-energy fatty acids, and therefore, dysregulated or gain-of-function mutation of PCSK9 is greatly associated with heart failure [2].

Moreover, PCSK9 is also involved in various different cellular mechanisms such as cardiomyocyte apoptosis and platelet activation. PCSK9 is associated with anti-inflammatory benefits by suppressing cytokines and oxidative stress allowing for healthy vascular aging [5, 6].

Studies have proved its effects on maintaining endothelial integrity by clearing apoptotic cells [6]. Aside from human genomic effects, a genetic study conducted on animal knock-out models with reduced PCSK9 reported to show cholesterol overload, inflammation, and even carcinogenesis [7]. These findings represent the conceptual uncertainty and effects linked to the gene, seeking cautious evaluation. Evidence from the BIOSTAT-CHF also supports the increased PCSK9 in blood substantially elevated the risk of heart failure [2]. Inactivation of PCSK9 has both positive and negative physiological effects, but the lasting impact overall still remains undetermined [5,7].

Therapies such as Evolucumab, a PCSK9 inhibitor, have been established lipid-lowering agents that have been proven to be efficacious and relatively safe. It has been demonstrated to reduce LDL cholesterol levels by 60% [3] and decrease the risk of cardiovascular events. However, even after these remarkable advances, it still does not guarantee life-long protection from cardiovascular events [3]. As statins are readily available and cost effective, the question remains if Verve 102 will be widely attainable at an economical rate. These PCSK9 physiological and pharmacological insights have established a basis to explore gene therapy as the next course in treatment.

The Next Step: Gene Therapy

Research on gene therapy has advanced significantly in recent years. This year, one of the greatest impacts was Verve's new naturally occurring gene variant that lowered LDL-C throughout life while protecting against cardiovascular events [4]. Verve 102 (The Heart-2 study) was designed to permanently inactivate PCSK9, providing lifelong LDL-C reduction. The goal was to permanently improve and modify the PCSK9 gene against these diseases [4].

This approach uses a lipid nanoparticle (LNP), a bubble-like delivery capsule that carries the RNA or gene editing material. It includes the Adenine Base Editor (ABE), guide RNA, lipids and GalNAc ligands [4].

Following IV infusion, the LNP circulates through the blood, entering the hepatocytes via ligand-receptor binding. After endocytosis, the genetic material is released, and the ABE, guided by the gRNA, disrupts a single DNA base pair, introducing a permanent change and disabling the PCSK9 protein [4]. Although Verve represents a highly beneficial and innovative technique, the evidence of long-term consequences of permanently silencing PCSK9 is still inconclusive. As the protein also participates in multiple cellular metabolisms beyond lipids, inactivating the gene could therefore lead to major risks that still are not yet fully understood [1].

Verve 102 - The Heart-2 Study

The Verve 102 study had 14 participants with ongoing CAD or HeFH with a mean baseline LDL-C of 140 mg/dl [4]. Outcomes were assessed for safety and pharmacodynamics/efficacy on PCSK9/LDL-C and RNA dose response.

Safety: The doses (0.3, 0.45, 0.6 mg/kg) had no significant adverse effects. This was proved by measuring the AST, ALT, and platelet values. All the values were stable, showing no dose-limiting toxicities. Mild side effects (e.g., dizziness, fatigue, rash) were observed [4].

Efficacy: A mean reduction of PCSK9 was >59% in the group with the highest dosage (0.6 mg/kg). The maximum reduction in participants was 69% [4]. While traditional treatments require lifelong therapy and sometimes still fail to lower and maintain LDL-C, this significantly decreased PCSK9 by approximately 60%, signifying a reduction of LDL-C in participants with cardiovascular diseases. A parallel comparison was seen with the LDL-C levels. A scatter plot between RNA dose and LDL-C levels signified a negative relationship between the two. A Pearson correlation of r = -0.79, which is a strong negative correlation, was observed [4]. It showed that the higher the total RNA, the greater the LDL-C reduction. The groups were also differentiated by RNA doses, the ranges being <25 mg, 25–<50 mg, and ≥50 mg. They noticed that in the ≥50 group the PCSK9 reduced by a mean of 65% and the LDL-C was reduced by a mean of 59% [4].

Although the results show a remarkable reduction of LDL and PCSK9 levels, the Heart-2 trial still remains in its preliminary stages. With only 14 participants, which is rather a smaller sample size to draw larger conclusions [4]. Additional phases of clinical trials, incorporating larger and more diverse populations, will be essential to establish long-term safety margins and external validation [4]. This allows enhancement of accuracy and reliability before it can be considered for widespread use.

Verve 101 vs. Verve 102: The Advances

Verve 101 (The Heart-1) trial was the parent study to Verve 102 and achieved a 58% LDL-C reduction that was sustained for 2 years [4]. Verve 102, by contrast, replicated this durability while maintaining a better safety profile, increased efficacy, and lowered cholesterol with a single shot. That is equivalent to years of adherence to medications simplified into one single dose [4]. Verve 101 also showed laboratory abnormalities such as out-of-balance elevated ALT and platelet levels. Verve 102 achieved these benefits by adding a molecule known as GalNAc-LNP [4]. The LNP particle is attached to GalNAc, a sugar molecule that binds to a very specific receptor on liver cells. This allows direct reuptake by the hepatocytes rather than depending on the LDL receptors. This method is more efficient in terms of targeting the precise cell type, safety, and reduced reliance on defective LDL receptors in individuals with hypercholesterolemia [4]. GalNAc-LNP also appeared to be better tolerated at high doses, as shown in the Heart-2 trial [4].

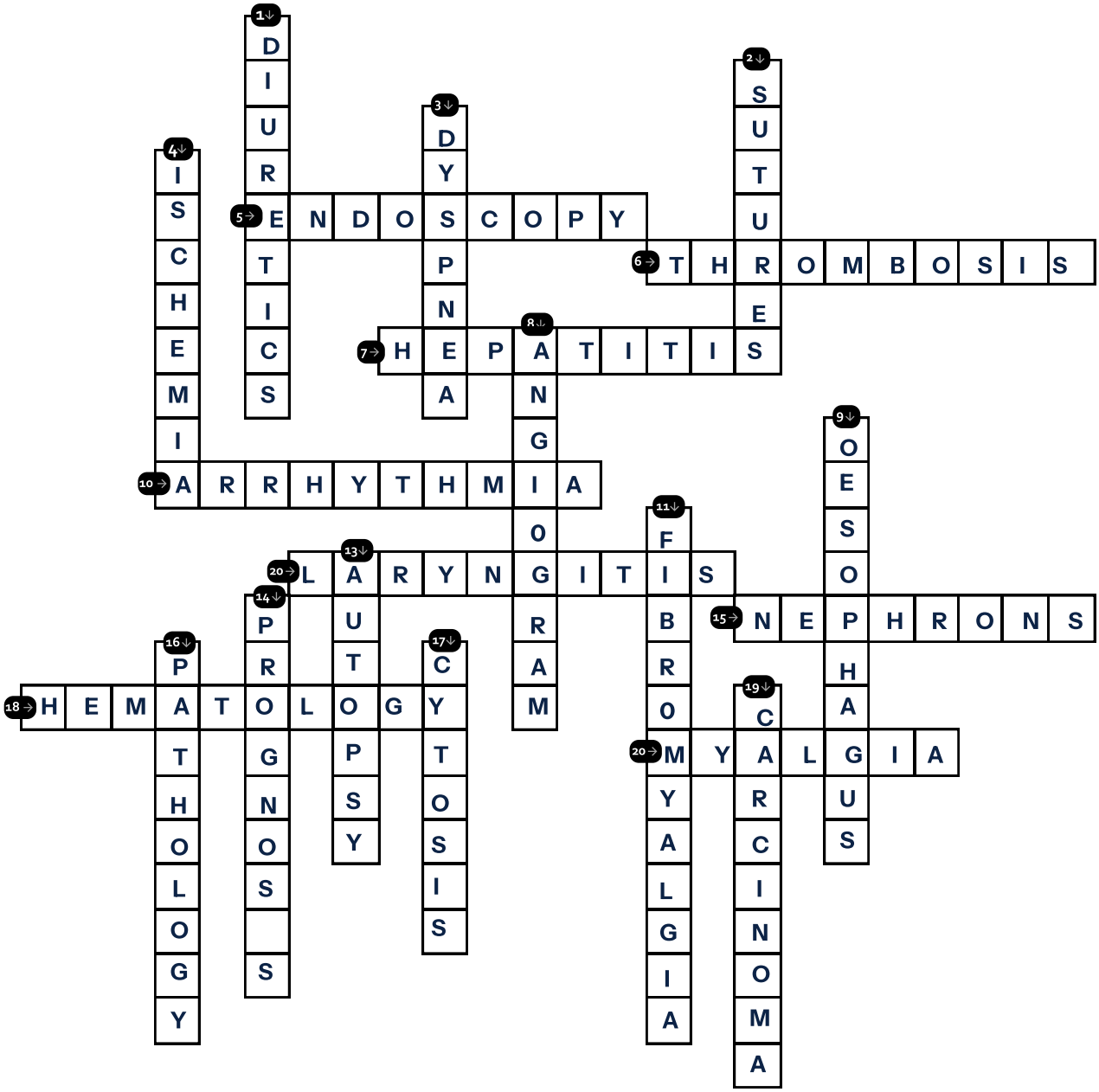
In the Heart-1 trial, the participants who received Verve 101 showed a 58% reduction of LDL-C values that was sustained for a brief span of months. This revealed that a single base pair edit can potentially produce a lifelong suppression of PCSK9, implicating a wider durability over decades of traditional medications such as statins or PCSK9 inhibitors [4]. This provided them with a backbone for their new advances in Verve 102 with improved safety and enhanced effectiveness [4]. Verve 102 may serve as the new blueprint for future studies, but it demands further refinement.

It still remains far from perfection and requires FDA approval. It heavily relies on confirming the durability of safety and side effects and potency through larger clinical trials [4].

From Therapy to Cure

Verve Therapeutics has carved a path in the gene editing space, pioneering a fundamental advancement in the Heart-2 trial. Verve's early findings demonstrated an optimal and favorable dose-dependent reduction of LDL-C/PCSK9 [4], with a short-term safety profile, leaving long-term risks to be impending. Similarly, in participants with higher RNA concentrations, a 50% reduction of LDL-C levels was observed, underscoring the therapy's potency [4]. These findings have been enhanced with the implementation of GalNAc-LNP (ligand-receptor binding) and are being used strategically for higher safety and efficacy [4]. Taken together, this study could represent a pivotal innovation in gene therapy and heart disease management [4]. Verve 102 is a building block towards the ultimate goal that still depends on proving tolerability and affordability in larger, diverse populations. As established therapies such as PCSK9 inhibitors have already proven their substantial reduction in LDL-C and risk of cardiovascular events and are deemed safe with pharmaceutical approval, they raise the bar high for Verve 102 to reach the same level. Additionally, permanent genome editing requires ethical regulations and rigorous monitoring before it can be introduced for therapeutic use [8]. With this evidence, Verve 102 could possibly represent a lifelong, one-dose cure for patients with hypercholesterolemia or cardiovascular diseases, requiring further evaluation.

Crossword Puzzle Answers



Down:

1. Medications that increase urine output
2. Stitches used to close wounds
3. Difficulty breathing
4. Inadequate blood supply to an organ
8. Imaging test for blood vessels
9. Muscular tube connecting mouth to stomach
11. Chronic pain with fatigue and tenderness
13. Postmortem examination
14. Likely outcome of a disease
16. Study of disease causes and effects
17. Condition involving abnormal cells
19. Malignant tumor in epithelial tissue

Across

5. Visual examination of internal organs
6. Formation of a blood clot inside a vessel
7. Inflammation of the liver
10. Irregular heartbeat
12. Inflammation of the voice box
15. Functional units of the kidney
18. Study of blood and its
20. Muscle pain

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