Trends in
Pharmacological Sciences

CellPress

Series: Meet the first authors

TrendsTalk

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'Meet the first authors' is a *TrendsTalk* series launched in *Trends in Pharmacological Sciences* in 2026 by Dr Jerry Madukwe, Editor-in-Chief of the journal. These articles feature the first authors of review and opinion pieces published in each monthly issue. The series offers a platform for authors to share their journey to becoming scientists, their current roles and sources of inspiration, personal perspectives on current challenges in their fields, and their thoughts on future research directions. It also highlights opportunities for collaborations, new ventures they are eager to pursue, and advice for young scientists.

Princy Shrivastav

Princy Shrivastav (PS) is the first author of the review, 'Molecular glues evolve from serendipity to rational design'. PS is currently pursuing her PhD in Pharmaceutical Sciences at MIT World Peace University. Her main research focus is based on small molecule design for Alzheimer's disease.

What was your path to becoming a scientist, and can you tell us a bit about your current role?

PS: I progressed from M. Pharm. in Pharmaceutical Chemistry from Savitribai Phule Pune University to a PhD focused on drug discovery, integrating computational design and synthesis. I'm currently serving as a Junior Research Fellow at MIT World Peace University where I'm developing KCNQ2 activators for Alzheimer's disease while balancing research and coursework.

Do you have a role model in science or medicine? If so, who and why?

PS: I'm inspired by scientists who successfully translate laboratory discoveries into meaningful clinical therapies. Their ability to combine innovation, scientific rigor, and compassion for patients motivates me to pursue research that has real-world impact rather than remaining purely academic. I highly look up to my mentor and research guide, Dr Rohit Singh, who is also the coauthor of this paper. His ability to ask the right scientific questions, encourage independent thinking, and support me through challenges strengthens my confidence and passion for research.

What do you see as the challenges and opportunities in the field?

PS: In my opinion, major challenges in my field of research include limited high-quality curated datasets, biological complexity, and translation to clinic. However, advances in artificial intelligence (AI), machine learning, virtual screening, and natural product research are creating exciting opportunities for faster, more precise development.

What are some of the global views or concepts we should be thinking about for developing novel therapies/diagnostics?

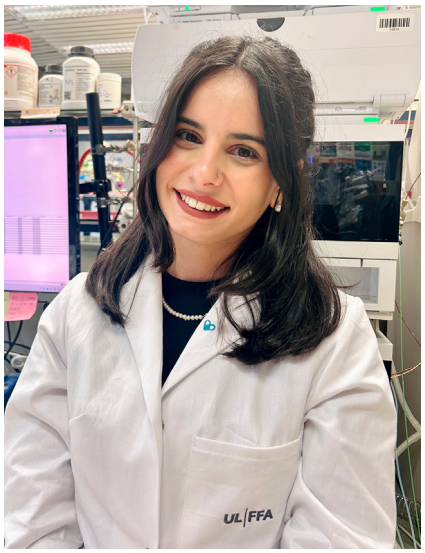
PS: Future innovation requires precision medicine, early disease detection, integration of multi-omics data, and sustainability in natural product sourcing. I believe combining computational approaches with experimental validation and focusing on neurodegenerative diseases and aging-related disorders will be essential for next-generation therapies.

What kind of collaborations and new ventures are you interested in building or pursuing?

PS: I hope to collaborate with researchers involved in computational chemistry, molecular biology, and medicinal chemistry. I'm especially interested in projects involving virtual screening, central nervous system (CNS) drug targets, and translating computational findings into synthesized and tested lead molecules. I'm looking for collaborations to expand my connections for future researches.

What advice would you give to young scientists who are just starting out in their careers?

PS: I would advise blooming scientists to stay curious and resilient; research involves both progress and failure. Build strong fundamentals, seek good mentors early, welcome collaboration, and develop writing and communication skills. Most importantly, maintain balance and passion, because long-term success comes from consistency and purpose, not speed.



Marzia Fois

Marzia Fois (MF) is the first author of the review, 'The structure, function, and pharmacology of SK channel family'. She is a graduate student in the laboratory of Professor Dr Tihomir Tomašič and Professor Dr Lucija Peterlin Mašič at the University of Ljubljana, Faculty of Pharmacy. Her main research focus is the design and synthesis of small molecules targeting potassium channels, including SK and Kv1.3 channels, with a particular interest in mitochondrial modulation.

What was your path to becoming a scientist, and can you tell us a bit about your current role?

MF: My path to becoming a scientist began with a Master's degree in Pharmaceutical Chemistry and Technology, summa cum laude, at the University of Cagliari, Italy, where I developed a strong interest in drug discovery. During my studies, I completed a research internship and thesis work at the University of Ljubljana, Slovenia, which introduced me to ion channel pharmacology and sparked my interest in potassium channels. These experiences shaped my scientific curiosity and motivated me to pursue a PhD in Biomedicine, focusing on the design and synthesis of small molecules targeting Kv1.3 and SK channels, with a special interest in their mitochondrial localization and roles in apoptosis in cancer cells.

Do you have a role model in science or medicine? If so, who and why?

MF: I am fortunate to have several role models who have guided me throughout my research journey. Most importantly, my PhD mentor, Dr Tihomir Tomašič, has been an extraordinary guide. His insight, patience, and encouragement have shaped how I approach science, helping me navigate challenges and setbacks while fostering curiosity and openness to interdisciplinary approaches. My co-mentor, Dr Lucija Peterlin Mašič, has provided strategic guidance and fostered a collaborative environment. Observing their dedication to both mentorship and discovery has inspired me to grow as a researcher.

What do you see as the challenges and opportunities in the field?

MF: A major challenge in small molecule development, including for complex targets such as ion channels and SK channels, is achieving high selectivity while maintaining efficacy and safety. Translating detailed molecular insights into accessible therapies remains difficult, further complicated by limited funding and increasing specialization.

However, advances in structure-based design, AI, and interdisciplinary strategies offer powerful opportunities to accelerate discovery and develop more targeted, patient-specific treatments with real clinical impact.

What are some of the global views or concepts we should be thinking about for developing novel therapies/diagnostics?

MF: Future progress in therapeutic and diagnostic development, including my field, should focus more on bridging the gap between basic research and real clinical application. Strengthening this connection, together with wider use of patient-derived models and aligning research with real clinical needs, will be essential. Promoting sustainable practices, adaptive regulatory approaches, and global data sharing can further support solutions that are both effective and socially meaningful.

What kind of collaborations and new ventures are you interested in building or pursuing?

MF: I am interested in building collaborations that connect medicinal chemistry with functional validation and disease models. I welcome opportunities such as joint projects, international partnerships, visiting positions, or postdoctoral exchanges. For me, the meaningful collaborations are those that foster mutual growth, where combining different perspectives sparks new ideas and discoveries that would not be possible alone.

What advice would you give to young scientists who are just starting out in their careers?

MF: Research is not a linear journey, but a path shaped by both failures and successes. Learning to accept frustration as part of the process is essential, as is cultivating resilience and curiosity. Science teaches you to question, adapt and grow across disciplines that may seem distant yet are deeply interconnected. Staying open-minded, seeking mentorship and remembering what first drew you to discovery can make even the most challenging moments deeply rewarding.

Md Ibrahim

Md Ibrahim (MI) is the first author of the article 'Nerandomilast as the first PDE4B-selective therapy in idiopathic pulmonary fibrosis'. He recently completed his PhD in Basic Medical Science, with a concentration in Cancer Biology, at the University of South Alabama College of Medicine. He is currently an Assistant Professor in the Department of Pharmaceutical and Biomedical Sciences, College of Pharmacy, California Northstate University. His research focuses on developing translational therapies to target undruggable DNA damage pathways in cancer, neurodegenerative diseases, and pulmonary arterial hypertension (PAH).

What was your path to becoming a scientist, and can you tell us a bit about your current role?

MI: I trained in pharmaceutical sciences. My father's fight with adenocarcinoma pushed me toward research, leading to a PhD in cancer biology on DNA repair and therapy resistance. Now I am an assistant professor at California Northstate University, running a lab on therapies in cancer, neurodegeneration, PAH, and microfluidic diagnostics.

Do you have a role model in science or medicine? If so, who and why?

MI: I draw inspiration from scientists who connect basic cell biology to real patient impact. Dr Keith Caldecott stands out for linking fundamental DNA repair work to disease

models, which matches my translational mindset. My PhD mentor, Dr Robert Sobol, shaped me by teaching critical thinking, to doubt my own data, and to follow evidence wherever it leads.

What do you see as the challenges and opportunities in the field?

MI: A major challenge is that most disease drivers are still hard to target, especially non-enzymatic proteins and complex repair networks. The opportunity is exciting because new tools like targeted protein degradation, RNA therapeutics, systems-level omics, and AI or virtual reality driven modeling can finally reach those drivers with real precision.

What are some of the global views or concepts we should be thinking about for developing novel therapies/diagnostics?

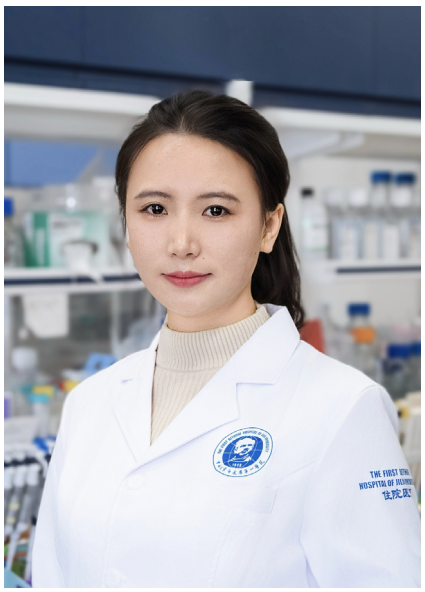
MI: We should strengthen collaborations with developing countries, where talented researchers need guidance and high impact work can be done at lower cost. We also must move past single targets toward network vulnerabilities, patient diversity, and real-world biology. Therapies should be modular and biomarker guided. Diagnostics should be early, portable, minimally invasive, and globally accessible.

What kind of collaborations and new ventures are you interested in building or pursuing?

MI: I am interested in cross-disciplinary collaborations linking DNA repair, metabolism, virtual reality, data science, and translational drug therapy with clinical cohorts. I am open to National Institutes of Health (NIH) and foundation partnerships, multi-site PAH and cancer projects, visiting roles that expand our pipeline, and industry collaborations for RNA therapeutics, degraders, and diagnostics.

What advice would you give to young scientists who are just starting out in their careers?

MI: You do not have to chase someone else's dream. Focus on research that truly matters to you and helps patients. Do not race for citations or the number of papers. Build strong fundamentals and clear thinking. Learn to write grants and communicate well. Use AI ethically, find honest mentors, collaborate early, and treat failure as training. Protect your integrity.



Wenju Zhang

Wenju Zhang (WZ) is the first author of the review, 'Targeting BRD4 bromodomains and beyond: exploring new therapeutic frontiers'. She recently completed her medical training (MD) in oncology and is currently pursuing a PhD in biochemistry and molecular biology at the First Hospital of Jilin University. Her main research focus is epigenetic regulation mechanisms in cancer.

What was your path to becoming a scientist, and can you tell us a bit about your current role?

WZ: My training in both clinical medicine and basic research, though challenging, provides a distinctive perspective that enables me to integrate mechanistic insights from science with translational needs from clinical practice. Currently, I focus on epigenetic dysregulation in cancer, investigating how aberrant transcriptional control drives tumor progression. Working at the interface of laboratory and clinic allows me to align fundamental discoveries directly with potential clinical applications.

Do you have a role model in science or medicine? If so, who and why?

WZ: I am inspired by several mentors who have shaped my journey. In clinical medicine, Dr Guanghui Cheng of Jilin University exemplified how to combine clinical excellence with compassionate patient care. Scientifically, my PhD advisor Dr Lei Zeng has been instrumental in developing my research capabilities through his expertise and rigorous mentorship. I also greatly appreciate our collaborator Professor Ming-Ming Zhou, whose pioneering work in epigenetics and drug discovery provides continual inspiration. Their collective dedication to advancing both science and medicine motivates me to pursue meaningful research while maintaining the highest standards in clinical practice.

What do you see as the challenges and opportunities in the field?

WZ: In clinical oncology, key challenges include the complexity of context-specific tumor biology and the limitations of current therapeutic strategies, which often face dose-limiting toxicity and resistance. Public awareness of early detection remains insufficient, while affordable and reliable biomarkers for screening are still lacking. However, these challenges present significant opportunities. Multidisciplinary collaborations, integrating basic research, clinical practice, pharmacology, engineering, and public health, can drive innovative solutions. Advances in AI offer effective tools for diagnosis, structural analysis, and drug discovery, while novel sequencing technologies enable deeper mechanistic insights into cancer biology. Together, these developments present promising avenues to improve early detection, therapeutic efficacy, and our fundamental understanding of cancer biology.

What are some of the global views or concepts we should be thinking about for developing novel therapies/diagnostics?

WZ: The development of new therapies and diagnostics must be guided by a commitment to global equity and a humanitarian approach to care. While advancing prediction, prevention, and personalization, innovations must prioritize broad accessibility alongside efficacy. This demands interdisciplinary and international collaboration focused on affordable, scalable solutions. True success relies on translating discoveries into real-world impact for all, ensuring that geography and socioeconomic status do not impact survival outcomes.

What kind of collaborations and new ventures are you interested in building or pursuing?

WZ: I aim to establish interdisciplinary and international collaborations that connect clinical practice with fundamental research across diverse geographic and socioeconomic regions worldwide. My particular interest lies in developing joint research programs and clinical trials that ensure both therapeutic excellence and broad accessibility. Through these partnerships, I seek to advance affordable, scalable solutions that translate scientific innovations into globally equitable health outcomes.

What advice would you give to young scientists who are just starting out in their careers?

WZ: My advice to young scientists is to keep both curiosity and determination. Let your passion drive your exploration, while resilience helps you approach challenges creatively. Though demanding, balancing clinical work with basic research can bring unique rewards. This unique perspective clarifies translational goals and strengthens purpose.

Stay curious about unanswered questions, remain persistent through obstacles, and trust that integrating different fields leads to both personal growth and meaningful scientific impact.

Junsha An

Junsha An (JA) is the first author of the review, 'Sodium's role and therapeutic targeting in cancer'. JA is a graduate student in the West China School of Pharmacy at Sichuan University in China. Her main research focus is the occurrence and metastasis of triple-negative breast cancer, with particular interest in identifying novel therapeutic targets and exploring mechanisms underlying its aggressive behavior.

What was your path to becoming a scientist, and can you tell us a bit about your current role?

JA: My path to becoming a scientist began with a deep interest in cancer research and a strong desire to contribute to better treatments. Currently, my research focuses on understanding the mechanisms of triple-negative breast cancer progression and metastasis, particularly the role of immune cells like microglia in brain metastasis. I use bioinformatics, omics sequencing technologies, and both cell and animal models to study these processes. A key aspect of my work is investigating cell death pathways, especially ferroptosis, and their impact on cancer.

Do you have a role model in science or medicine? If so, who and why?

JA: Yes, my role model is Tu Youyou. Her pioneering work in discovering artemisinin for malaria treatment has had a profound impact on global health. I deeply admire her perseverance, innovative approach, and dedication to scientific research, especially in her ability to integrate traditional Chinese medicine with modern scientific methods. She demonstrated the power of interdisciplinary solutions to global health challenges.

What do you see as the challenges and opportunities in the field?

JA: A key challenge is bridging the gap between basic mechanistic research and clinical application. Translating discoveries into effective treatments often takes time and faces numerous barriers. The opportunity lies in closer collaboration with clinical settings, where researchers can identify challenges during patient treatment. By understanding patient-specific responses and real-world issues, we can refine our research and rapidly address gaps, accelerating the translation of findings into clinical practice.

What are some of the global views or concepts we should be thinking about for developing novel therapies/diagnostics?

JA: We should focus on personalized medicine, integrating genomics and AI to tailor treatments to individual patients. Collaboration across countries and disciplines is key to speeding up innovation. It's also important to look at health from a holistic perspective, considering environmental and lifestyle factors to make treatments more effective for diverse populations.

What kind of collaborations and new ventures are you interested in building or pursuing?

JA: With 2 years left until completing my PhD, I am eager to engage in international collaborations to enhance my research and broaden my academic perspective. Afterward, I plan to apply for postdoctoral opportunities, focusing on the mechanisms underlying triple-negative breast cancer progression and metastasis. I have expertise in omics analysis, cell experiments, and the establishment of animal models, and I'm excited

to explore more collaborative opportunities to advance this research and apply it to potential therapeutic strategies.

What advice would you give young scientists who are just starting out in their careers?

JA: Stay curious, be patient with your progress, and build strong foundations in both skills and ethics. Seek good mentors, embrace collaboration, and face failure with courage, as it's a natural part of discovery. Most importantly, stay committed to meaningful research questions that truly inspire you, as passion will drive your success in the long run.

Julie A. Kobyra

Julie A. Kobyra (JAK) is the first author of the review, 'Treating periodontal disease: from antimicrobials to immunomodulation'. JAK is a graduate student in the laboratories of Drs Steven Little and Charles Sfeir at the University of Pittsburgh in Pennsylvania. Her research focuses on the development of novel polymeric microparticle delivery systems to modulate the host immune response for the treatment of periodontal disease.

What was your path to becoming a scientist, and can you tell us a bit about your current role?

JAK: My path to becoming a scientist began with a strong childhood curiosity about how things worked, which led me to gravitate toward different science and math courses throughout school. This led me to pursue a BS in Biomedical Engineering at George Washington University where I began my research journey investigating epigenetic drugs as a treatment for ovarian cancer. Upon exposure to research, I knew I wanted to pursue a graduate degree in Bioengineering. I am now a graduate student in Bioengineering at the University of Pittsburgh where I focus on the development of novel immunomodulatory treatments for periodontal disease.

Do you have a role model in science or medicine? If so, who and why?

JAK: I have no one scientific role model, rather I admire scientists who are passionate, driven, and committed to innovative thinking. As a woman in STEM, I especially admire figures like Marie Curie, Jennifer Doudna, and Katalin Karikó, whose contributions have pushed boundaries of their fields and challenged established ideas.

What do you see as the challenges and opportunities in the field?

JAK: Current treatment for periodontal disease focus on eliminating bacteria through mechanical means or antibiotic use; however, with the shift in thinking of periodontal disease as an immune-mediated disease, there are ample opportunities for the development of novel host modulatory treatments. Despite this, difficulties in establishing the optimal balance between suppressing the dysregulated inflammatory response and preserving antimicrobial defense while ensuring patient safety remain. Furthermore, practical challenges like manufacturing, costs, and regulatory issues will need to be addressed prior to clinical adoption.

What are some of the global views or concepts we should be thinking about for developing novel therapies/diagnostics?

JAK: As the field evolves, it will be crucial to integrate diverse data types to drive the development of new therapies/diagnostics. Furthermore, it will be important to look beyond a single disease and adopt a broader perspective. Finally, focus should be

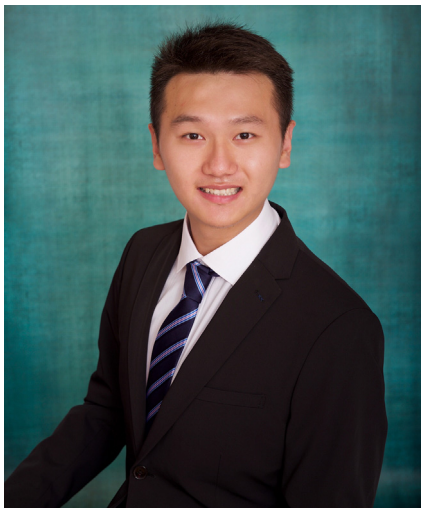
placed on creating treatments that are accessible to patients from different backgrounds and adaptable to support a more personalized treatment approach.

What kind of collaborations and new ventures are you interested in building or pursuing?

JAK: As I am nearing the end of my PhD, I want to continue making connections with individuals who work at the interface of engineering, immunology, and translational medicine. Looking towards my next step in my scientific career, I am interested in learning more about different opportunities for post-doc and industry roles in biotech or pharma that involve preclinical research and development.

What advice would you give to young scientists who are just starting out in their careers?

JAK: Stay curious! It's important to nurture that curiosity and to not be afraid to ask questions or seek our new experiences or opportunities.



Yan-Ruide Li

Yan-Ruide Li (Y-RL) is the first author of the article, 'Autologous, allogeneic, *in vivo* CAR for autoimmune diseases'. Y-RL received his PhD from the University of California, Los Angeles (UCLA) in 2021 and is currently a research scientist at UCLA. His research focuses primarily on the development of novel immunotherapies for cancer and autoimmune disorders.

What was your path to becoming a scientist, and can you tell us a bit about your current role?

Y-RL: My parents are both professors in electrical engineering in China, and they instilled in me an early appreciation for scientific inquiry and research. Their influence taught me how to think critically and approach problems systematically. In high school, I became fascinated by cell and gene engineering, particularly cloning technologies, which sparked my passion for biology. This interest led me to pursue a career as a biomedical scientist, where I now focus on developing innovative immunotherapies and engineered cell therapies to improve disease treatment outcomes.

Do you have a role model in science or medicine? If so, who and why?

Y-RL: Yes, my role model is Dr David Baltimore, a pioneering scientist whose groundbreaking discoveries in immunology and virology have profoundly shaped modern biomedical research. He was also my PI's mentor, and I had the privilege of meeting him at Caltech several years ago. I was deeply inspired by his intellect, humility, and lifelong dedication to fundamental science. One of his quotes that resonates with me is: 'Basic science is the seed corn of societal impact'. His passing this September was a great loss to the scientific community, and I remain deeply grateful for his influence and legacy.

What do you see as the challenges and opportunities in the field?

Y-RL: A major challenge in cell-based immunotherapy is the high cost and complexity of manufacturing personalized products. Developing off-the-shelf, allogeneic chimeric antigen receptor (CAR) cell therapies offers a key opportunity to lower production costs, enhance accessibility, and deliver effective, scalable treatments to a broader range of patients.

What are some of the global views or concepts we should be thinking about for developing novel therapies/diagnostics?

Y-RL: A global concept shaping the future of immunotherapy is *in vivo* CAR engineering, where therapeutic immune cells are programmed directly within the patient's body. This strategy bypasses complex *ex vivo* manufacturing, significantly reducing cost and production time. By delivering CAR genes through viral or non-viral vectors, *in vivo* reprogramming enables scalable, rapid, and personalized treatment, making advanced cell-based immunotherapies more accessible worldwide.

What kind of collaborations and new ventures are you interested in building or pursuing?

Y-RL: I am looking to build long-term collaborations that bridge academia, industry, and clinical research. My goal is to pursue a tenure-track position and secure research funding, particularly programs that support international collaboration. I'm interested in partnerships that combine translational immunotherapy research with clinical application, as well as opportunities such as visiting professorships, industry collaborations, and joint grants. These connections will help advance innovative cell-based therapies and strengthen my global research network.

What advice would you give young scientists who are just starting out in their careers?

Y-RL: My advice is to build a strong foundation – gain technical skills, read widely, and learn from experience. As an old Chinese saying goes, 'accumulate deeply before making a powerful impact'. Science requires patience, persistence, and the courage to face challenges and failures. Keep your curiosity alive, think boldly, and pursue your goals with passion. Big dreams, combined with steady effort, will ultimately lead to meaningful discoveries.

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