



## Professor David E. Smith: A Fearless Scientist and Devoted Mentor

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It is an honor and privilege to have been invited as guest editors for this issue that commemorates the career and scientific achievements of Professor David E. Smith, Ph.D.. On behalf of his former students (Thompson class of 2020 and Posada class of 2012) and colleagues (Brouwer and Bendayan), we would like to congratulate and thank David, and wish him a very well-deserved and fulfilling retirement.

This theme issue is dedicated to Professor David Smith in tribute to his career in the field of Pharmaceutical Sciences through his scholarship, service, and mentorship. David was an editor of *Pharmaceutical Research* from 2001 until 2017. During his career, Dr. Smith made many important scientific contributions, including those on the kinetic-dynamic relationship of loop diuretics, the determinants of renal drug elimination, the regional pharmacokinetics of anticancer drugs, and the cellular and molecular biology, physiology, and pharmacology of proton-coupled oligopeptide transporters. In particular, his research group was the first to develop, validate, and publish PepT2 knockout, PepT1 knockout, and PepT1 humanized mouse models. His academic journey has taken him around the world and, fortunately, into the lives of many of us as an advisor, colleague, friend, and more than often, as all three.

Professor David E. Smith was born in 1952 and grew up in Canarsie, Brooklyn, New York. In 1970 he left Brooklyn for Buffalo, where he received his B.S. in Pharmacy from the State University of New York at Buffalo in 1975. David then moved across the country to the University of California San Francisco (UCSF) where he obtained his Ph.D. in 1981 in Pharmaceutical Chemistry under the supervision of

Professor Leslie Benet, Ph.D. His graduate work focused on the Pharmacokinetics and Pharmacodynamics of furosemide.



Caption: David and his brother, Marc, in the Bayview Houses, Canarsie, Brooklyn (circa 1958).

David started as an Assistant Professor in 1981 at the University of Michigan College of Pharmacy and became Full Professor in 1997. He was also a member of the Upjohn Center for Clinical Pharmacology from 1991 to 2010, the Comprehensive Cancer Center from 1991 to 2023, and the Michigan Gastrointestinal Peptide Research Center from 2008 to 2023, all in the Medical School. In 1999, he became the Founding Chair of the Department of Pharmaceutical Sciences, College of Pharmacy, University of Michigan and led the department through 2010.



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Caption: David during his undergraduate studies at the State University of New York at Buffalo (1975).

David has always been interested in learning about new areas and establishing new collaborations, which led him to working and visiting several institutions during his tenure at Michigan. In 1989 – 1990, during a one-year leave of absence, he worked in the Department of Drug Metabolism and Pharmacokinetics, Schering-Plough Research. Later, from 1996 to 1997, he spent a six-month sabbatical leave learning about molecular biology, transporters and cloning with Matthias Hediger, Ph.D., in the Renal Division of Brigham and Women’s Hospital, Harvard Medical School. During a six-month sabbatical leave in 2011, David studied with Michael Fischbach, Ph.D., in the Department of Bioengineering and Therapeutic Sciences at UCSF, where he was interested in learning more about the mechanisms of microbiome-transporter interactions, and possible applications to improving drug delivery and response in patients with inflammatory bowel disease. Finally, in 2016, David was invited by the late Jean-Michel Scherrmann, Ph.D., along with Xavier DeClevés, PharmD., Ph.D., to the University of Paris Descartes, Paris, France where he taught a summer class on brain drug pharmacokinetics, pharmacodynamics, and transport regulation and interacted with faculty and students.



David E. Smith, Ph.D. – University of Michigan Faculty Picture (1981).

David has played an active role in AAPS since 1986 by organizing, moderating, and chairing multiple committees and sessions. He has had 29 consulting positions for industry. He was also a member of the American Association for the Advancement of Science, the International Society for the Study of Xenobiotics, the American Pharmacists Association, the American Association of Colleges of Pharmacy, and the American Society for Pharmacology and Experimental Therapeutics.

Professor Smith was passionate about teaching and in 2003 he won the Teaching Excellence Award and the Student

Appreciation Award from the College of Pharmacy at the University of Michigan. He supervised 36 Ph.D. students, 11 postdocs and visiting scientists, and 17 professional pharmacy students during his time at Michigan. He published more than 160 articles and gave over 140 invited presentations worldwide. His scientific distinction led to recognition of Professor Smith as an AAPS Fellow in 1998 and an AAAS Fellow in 2012. From 1981 to 2021, David taught both Pharm.D. and Ph.D. students in the basic and advanced pharmacokinetics and biopharmaceutics courses. He was involved at the University of Michigan outside of the College of Pharmacy, serving many roles, including those on the Senate Advisory Committee on University Affairs, the Tenure Committee, the Research Policy Committee, and the Advisory Committee of the General Clinical Research Center, Medical School. He served as a regular member on the Pharmacology Study Section of the National Institutes of Health from 1998–2002. Dr. Smith received the James R. Gillette Drug Metabolism and Disposition Best Paper Award from the American Society for Pharmacology and Experimental Therapeutics on two separate occasions (2002 and 2008).

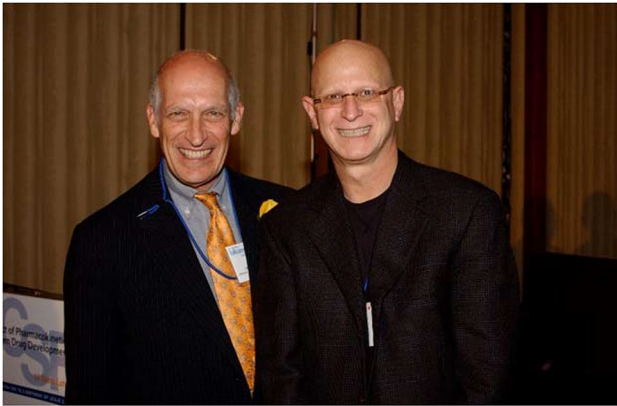
David is outgoing, loves to socialize and stays in touch with many colleagues and friends, including those from his early years in Brooklyn, NY. He has been a great mentor and advisor to students and new faculty members. His office door was always open, and he was always willing to listen and give advice about science and life inside and outside of the laboratory. David cared deeply about people and looked forward to helping his mentees with their career development. He always gave actionable and timely feedback that went beyond just scientific topics. He is a well-rounded individual with a lot of interests that go beyond science, including music, theater and traveling.

### **Reflection from Vicki Ellingrod, Pharm.D. (Dean and John Gideon Searle Professor of Pharmacy, College of Pharmacy, University of Michigan)**

I have had the honor of working with Dr. David Smith for the past 18 years. He has had such an illustrious career and truly is one of the pharmacokinetic leaders in the field as seen not only by his own scientific accomplishments, but also in his strong commitment to training the next generation of leaders. Beyond that, and what many may not know, is the fact that David is also a wonderful colleague; one that is always there to provide you with the truth, even when you don’t want to hear it, but also support you at times when you need it the most. In fact, it was his collegial interactions during my initial interview at Michigan that made me see what a truly special place our University is. While his retirement is so richly deserved, he will be missed and will never be replaced.

**Reflection from Leslie Z. Benet, Ph.D.  
(Professor, Department of Bioengineering &  
Therapeutic Sciences, Schools of Pharmacy  
& Medicine, University of California San  
Francisco)**

I am pleased to recognize and take pleasure in the outstanding research and educational accomplishments of David Smith, the 12<sup>th</sup> of 59 Ph.D. graduates that I have mentored. David's groundbreaking work on renal, brain and intestinal transporters and his significant, dedicated work on NIH study sections have greatly facilitated advances in our field, which have benefited us all.



Caption: David and his Ph.D. Advisor, Dr. Leslie Benet, Ph.D. (2007).

**Reflection from Margareta  
Hammarlund-Udenaes, Ph.D. (Senior  
Professor, Institutionen för Farmaci, Uppsala  
Universitet)**

Dr. David Smith is a world-renowned scientist with whom I have interacted since our Ph.D. studies, when we both were studying furosemide pharmacokinetics and pharmacodynamics, and reading each other's papers. While he did his Ph.D. project with Dr Leslie Z Benet, I came to the lab as a post-doc. Later we were both members of the Editorial Board of Pharmaceutical Research. We have also interacted through collaborative projects in more recent years regarding microdialysis and blood–brain barrier transport. His contributions to the transporter field are important, focusing on PepT2 at the brain barriers. I very much appreciate his high level of science, as well as many memorable events in conjunction with conferences.

**Reflection from Richard Bergstrom, Ph.D.  
(RFBergstrom PK/PD Consulting LLC)**

Dr. David E. Smith joined the UM faculty in the College of Pharmacy in 1981, just shortly after I had completed my Ph.D. with Dr. John G. Wagner. While we did not overlap at Michigan, we became best friends. It was so enriching to have had many in-depth discussions with David. I greatly appreciate and respect his passion for excellence. David and John shared an intense interest in PK, which likely resulted in any number of tense discussions, as working alongside John Wagner was at times challenging. And yet, they became the best of colleagues. By 1991 when Dr. Wagner retired, David's professorship was well established, having achieved excellence in teaching and research, and Dr. Smith was named the John G. Wagner Collegiate Professor of Pharmaceutical Sciences. How appropriate as Dr. Smith continued the UM tradition of cutting-edge PK research and education. We are proud of David's many distinguished and significant accomplishments in drug metabolism, organ function, transporters, and pharmacokinetics, and his long career at UM that carried on the fine traditions established at the College of Pharmacy. Throughout the years, David and I have remained steadfast friends and colleagues. It was my great privilege to work with David on programs and projects coordinated through AAPS. My deepest congratulations to Dr. Smith for his outstanding career in academia, and the indelible influence he has made in biopharmaceutics, pharmacokinetics and pharmacodynamics through his research and the education of many fine pharmaceutical scientists. Enjoy your retirement, David. It is well deserved!

**Reflection from Scott M. Hynes, Pharm.D.,  
Ph.D. (Ph.D. Student Class of 2005)**

Dr. Smith's guidance and shared experiences have been invaluable. I couldn't have asked for a better mentor. He always inspired me to put my best foot forward and lead by example. His contributions to the field of Pharmaceutical Sciences, as well as his dedication and commitment to the students and Pharmaceutical Sciences department at the University of Michigan are immeasurable.

**Reflection from Yongjun Hu, Ph.D. (Ph.D.  
Student Class of 2015)**

It has been a privilege to have worked alongside my mentor for 16 years in the College of Pharmacy. Our collaborative efforts on transporter research have been nothing short of inspiring, and I am grateful for the invaluable advice he has

imparted upon me, both professionally and personally. One of his most memorable quotes, “There are three important things in a job: your boss, the company, and the product” has stayed with me and serves as a reminder of his wisdom and guidance. Thank you for being an exceptional mentor and a true friend. I am honored to have been your student.

### **Reflection from Jean-Michel Scherrmann, Ph.D. (Late Professor of Pharmacokinetics, Faculty of Pharmacy at University of Paris City)**

I have shared several career events with David. Firstly, we received a part of our education in Pharmaceutical Sciences at the School of Pharmacy at Buffalo under the supervision of the same mentor, Dr. Ho-Leung Fung. Secondly, our research interests merged when the drug transporter area became an exciting research field for academic scientists in the early 1990s. David became an expert of the di- and tri-peptide transporter PepT2 by demonstrating its role in drug distribution and elimination using pharmacokinetic studies with emerging knock-out mouse models. I was working on P-glycoprotein and we met and discussed these transporter issues in several international meetings including the annual AAPS meeting. As both transporters were hot topics in drug delivery to the brain, we also joined the community of scientists investigating the blood–brain and blood–cerebrospinal fluid barriers. It was an intensive period of laboratory research and meetings where David appeared as one of the most prominent leaders in the domain. His contribution was highly appreciated and has helped to introduce the drug transporter chapter in the research and development of drugs in the pharmaceutical industry. David has been an invited Professor in my department at the Faculty of Pharmacy of Paris, where he spent a couple of months and was very much appreciated by our students and staff members. I have been very lucky to meet such a distinguished pharmaceutical scientist who has been so stimulating for the advancement of our domain. Finally, David became a wonderful friend over all these events. Always joking, smiling, and discussing wide ranging topics like philosophy, culture, and travel, he is not only a distinguished scientist, but also a great humanist.

### **Reflection from Ho-Leung Fung, Ph.D. (UB Distinguished Professor Emeritus, University at Buffalo)**

I am honored to congratulate David on his splendid career, at this moment of his official retirement. I have been privileged to know David from his young student days. Even at that time, one could see the spark of scientific curiosity, the

motivation to do good work, and the dedication to excellent science. It is not at all surprising, over several decades, to find David at the forefront of pharmaceutical research, making outstanding contributions to the field. A job well done indeed, David. We are all so proud of you.

### **Reflection from Haojie Zhu, Ph.D. (Professor Department of Clinical Pharmacy, University of Michigan, College of Pharmacy, Ann Arbor)**

I would like to express my sincere gratitude to Dr. David Smith for his invaluable contributions to my research and career development over the years. Dr. Smith has been a constant source of inspiration and support, and his mentorship has been instrumental in shaping my professional trajectory. I am truly fortunate to have had the opportunity to collaborate with him on several projects. Congratulations, Dr. Smith, on this well-deserved recognition of your achievements and best wishes for a healthy and fulfilling retirement.

### **Reflection from Bei Yang, Ph.D. (Ph.D. Student Class of 2012)**

I am grateful that I had the opportunity to pursue my Ph.D. under the mentorship of Dr. Smith at the University of Michigan. He is a very inspirational and supportive advisor. For my Ph.D. study on PepT1, he provided invaluable guidance helping me to identify the project, design the experiments and interpret the results. He particularly encouraged me to integrate a quantitative analysis section given my strong interest in modeling and computation and the relevance to the project. He was there to support, discuss and challenge ideas but always gave students full control in driving the project forward on a daily basis. Besides science, to take ownership of my own career and life was another important thing that I learned from him. Thanks, Dr. Smith!

### **Reflection from Yehua Xie, Ph.D. (Ph.D. Student Class of 2014)**

As a Ph.D. student of Professor Smith, I feel incredibly lucky to be a member of Smith Laboratory Family and have had the opportunity to work with such a kind and supportive mentor. It is difficult to put into words just how much I appreciate Professor Smith’s patience and support during my Ph.D. life. Despite the numerous challenges and setbacks I faced, Professor Smith never once lost faith in me and continued to guide me every step of the way. He was always



there for me, offering guidance and encouragement when I needed it most. His mentorship has been one of the most valuable experiences of my career.

I also used to be a graduate teaching assistant in Prof. Smith's Pharmacokinetics course for three semesters. Given Prof. Smith's dedication to delivering an outstanding learning experience, I can attest that the course was classic and welcoming to all the students. And it is no surprise that he received both the College of Pharmacy Teaching Excellence Award and the Student Appreciation Award during his teaching life.

### **Reflection from Xiaomei Chen, Ph.D. (Ph.D. Student Class of 2016)**

My Ph.D. project was very challenging and was filled with a lot of frustrations and setbacks. But I was very lucky to have Dr. Smith as my Ph.D. supervisor. He always showed his support for me in all aspects, while constantly encouraging me through some of my most difficult times. He has been guiding me not only on my career path but also on how to live life to the fullest. To me, he is a mentor, a role model, and family.

### **Reflection from Professor Xavier Declèves, Pharm.D., Ph.D., (Faculty of Pharmacy, University Paris Cité Hopital Cochin – Pharmacology and Toxicology)**

I was extremely pleased to welcome Professor David Smith as invited Professor in 2016 to the Department of Pharmacokinetics at the Faculty of Pharmacy of Paris from University Paris Cité. I was very impressed by the scientific quality of his courses in the master's degree program in Pharmacokinetics, especially on the subject of drug transporters. The

students particularly appreciated his availability and kindness to answer their questions. Personally, I have an extraordinary memory of our discussions with all the team on transporters at the intestinal level, in particular PepT1, opening drug delivery perspectives. I am deeply grateful for all that Professor Smith has been able to bring to my laboratory.

### **Reflection from Lucy Her, Pharm.D., Ph.D. (Ph.D. student class of 2021)**

Dr. Smith was my co-advisor during my Pharm.D., Ph.D. studies at the University of Michigan. His mentorship not only enabled the successful completion of my degrees, but also inspired me to pursue a career in PK/PD.

### **Reflection from Mohamed Komal, Ph.D. (Ph.D. Student Class of 2008)**

Dr. David Smith, who has contributed immensely to the field of Pharmaceutical Sciences, is not only a titan in our field, but also a wonderful human being. I would like to thank Dr. Smith for his unparalleled mentorship when I was a graduate student in his lab. He was a mentor, advisor and at times, when I needed it most, a friend who understood the challenges that a student can face during graduate school. His support and kindness were felt throughout my experience. One advice of wisdom he gave, which I will never forget, is that when faced with adversity, people don't necessarily care about the nature of your adversity but care more about how you pick yourself up and move forward. This is so true and has helped me hone one of my greatest strengths today: perseverance. Thank you, Dr. Smith, and God bless you!



Caption: Dr. Smith and several of his graduate and postdoctoral students celebrating his retirement in Ann Arbor, MI (2023).

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