

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF SURGERY
DEPARTMENT OF PHARMACOLOGY

Mark S. Cohen, M.D., associate professor of surgery, with tenure, Department of Surgery, and associate professor of pharmacology, without tenure, Department of Pharmacology, Medical School, is recommended for promotion to professor of surgery, with tenure, Department of Surgery, and professor of pharmacology, without tenure, Department of Pharmacology, Medical School.

Academic Degrees:

M.D.	1998	Washington University, St. Louis
B.S.	1994	Washington University, St. Louis

Professional Record:

2014-present	Associate Professor of Pharmacology, University of Michigan
2012-present	Associate Professor of Surgery, University of Michigan
2010-2012	Associate Professor of Surgery, University of Kansas
2010-2012	Adjunct Associate Professor of Pharmacology, Toxicology and Therapeutics, University of Kansas
2006-2010	Assistant Professor of Surgery, University of Kansas

Summary of Evaluation:

Teaching: Dr. Cohen's extensive teaching activities include undergraduate, graduate, and medical students, residents, post-doctoral fellows and junior faculty. He spends several hundred hours annually on teaching and mentoring in settings that include the classroom, operating room, clinic, laboratory, online, and at national meetings. Current institutional teaching includes didactic lectures and presentations of new material in endocrine surgery, drug therapy for cancer, and translational cancer research at the Endocrine Surgery Teaching Conference, Senior Resident Teaching Conference and Endocrine Surgery Research Journal Club. He is the course proctor for intern open skills, porcine operative, cadaver skills laboratories and surgery resident animate skills lab. He has served on six dissertation committees as a co-chair or committee member; a recent mentee received his Ph.D. with honors in pharmacology. Residents that he mentored have received prestigious research awards and grants. Medical students and residents consider Dr. Cohen an excellent doctor, teacher and role model as seen in his superior rankings on teaching evaluations.

Developing course material is a prominent part of Dr. Cohen's teaching effort. He has developed new lectures on drug delivery and biology of skin cancer for the Cancer Biology 554 class for

Ph.D. students in the Cancer Biology Graduate Program. He has developed the year-long curriculum for surgical residents to participate in the Entrepreneurial Development Program in conjunction with the university's Fast-Forward Medical Innovation Program. In the new Pathways of Excellence curriculum in the Medical School, Dr. Cohen developed and served as the director of the Innovation and Entrepreneurship Pathway; he also developed an online innovation curriculum with self-assessment and co-developed a post-graduate accelerator course in commercialization and entrepreneurship. Instruction to peer audiences through national and international society meetings has been in the development of websites, online educational modules, syllabi, and lectures for organizations such as the American Association of Endocrine Surgeons, Association of Academic Surgeons, and National Broadening Experiences in Scientific Training forum.

Research: Dr. Cohen is a highly productive and internationally recognized researcher specializing in the translational development of cancer drug therapies and innovation and entrepreneurship. He serves as the director for endocrine surgery research and leads collaboration with multiple departments focusing on cancer drug development and drug delivery systems for cancers of the thyroid, adrenalcortical, head and neck, melanoma, breast, colon, leukemia and brain. The clinical development of hyaluronan-cisplatin and hyaluronan-doxorubicin nanoparticles is a major focus for Phase 1 trials linked to specific cancers. His research has led to the development of novel c-terminal Hsp90 inhibitors for cancer treatment. His expertise in lead compound identification used in vitro and xenograft models is combined with chemistry and pharmaceutical experts to synthesize novel compounds. Dr. Cohen also works with a novel class of naturally derived anticancer compounds called withanolides; preclinical in vivo studies demonstrate their high level of potency with a lower toxicity profile compared to standard chemotherapy agents. Recent awards include the Society of University Surgeons and Association for Academic Surgery 2016 10x10 Career Development Award, the University of Michigan Fast-Forward Medical Innovation M-TRAC Drug Development Award, finalist for two Deshpande Awards for excellence in curriculum and outstanding contributions in innovation and entrepreneurship, one patent and four patent applications. Dr. Cohen is currently the principal investigator on one R01 NIH National Cancer Institute grant and several foundation and institutional grants, co-investigator on two R01 NIH National Cancer Institute grants and T-32 training grant, and has completed 17 research grants and clinical trials. Dr. Cohen has 80 peer-reviewed publications in respected journals such as *Drugs*, *Surgery*, *The Laryngoscope*, and *Investigational New Drugs*, nine book chapters, 75 national and international extramural invited presentations and 10 visiting professorships attesting to the importance of his novel research discoveries in the scientific community. Dr. Cohen is the associate editor for *BMC Cancer*, a member of the editorial board for *Frontiers in Oncology and Surgery* and ad hoc reviewer for 21 journals. He serves on grant review committees for the National Comprehensive Cancer Network, Susan G. Komen Foundation and several institutional review boards.

Recent and Significant Publications:

Grogan PT, Sarkaria JN, Timmermann BN, Cohen MS: Oxidative cytotoxic agent withaferin a resensitizes temozolomide-resistant glioblastomas via MGMT depletion and induces apoptosis through Akt/mTOR pathway inhibitory modulation. *Invest New Drugs* 32:604-617, 2014.

Sim MW, Grogan PT, Subramanian C, Bradford CR, Carey TE, Forrest ML, Prince ME, Cohen MS: Effects of peritumoral nanoconjugated cisplatin on laryngeal cancer stem cells. *Laryngoscope* 126:184-190, 2015.

Subramanian C, Kuai R, Zhu Q, White P, Moon JJ, Schwendeman A, Cohen MS: Synthetic high-density lipoprotein nanoparticles: A novel therapeutic strategy for adrenocortical carcinomas. *Surgery* 159:284-295, 2016.

White PT, Subramanian C, Zhu Q, Zhang H, Zhao H, Gallagher R, Timmermann BN, Blagg BS, Cohen MS: Novel HSP90 inhibitors effectively target functions of thyroid cancer stem cell preventing migration and invasion. *Surgery* 159:142-151, 2016.

Lirov R, Worden FP, Cohen MS: The treatment of advanced thyroid cancer in the age of novel targeted therapies. *Drugs* 77:733-745, 2017.

Service: Dr. Cohen has a remarkable commitment to service and has chaired many committees for the institution and for national societies. Currently he serves as the director of the Pathway of Excellence in Innovation and Entrepreneurship for the Medical School, associate chair in Surgery for Innovation and Entrepreneurship, innovation chief, Comprehensive Cancer Center, Appointed Member of the Governance Committee Working Group for the Tissue Biorepository and is a member of several department and Cancer Center committees. Nationally, he is an elected member of the Society of University Surgeons serving on the Publications and Program Committee. He has served on several drug delivery study sections for the National Science Foundation, a session moderator for the Southwestern Surgical Congress, several committee leadership roles for the Association for Academic Surgery and as faculty lecturer or session moderator for the Academic Surgical Congress. Dr. Cohen was also elected to the Surgical Biology Club II of the American College of Surgeons. He is a member of a multitude of esteemed national societies and of the following international societies: International Association of Endocrine Surgeons, International Society of Surgery, and Asian Association of Endocrine Surgeons.

Dr. Cohen is an endocrine surgeon and a member of the University of Michigan Cancer Center. He performs minimally invasive parathyroid surgery, adrenalectomy, and advanced neck dissections for thyroid cancer and melanoma. In addition, he developed a new clinical program in hyperthermic limb perfusion for advanced melanoma, which required coordination of multiple departments and is now the largest program of its kind in the United States.

External Reviewers:

Reviewer A: "He has distinguished himself as a creative investigator who is actively involved in the development of new agents to treat endocrine malignancies. Dr. Cohen's active laboratory has been responsible for numerous scholarly publications as well many presentations at regional, national, and international meetings."

Reviewer B: “Highlights of his scholarly productivity include: discovery and translational development of withanolides for treatment of cancer, nanoparticle drug delivery carrier platforms, and translational development of heat shock protein inhibitor analogs for cancer treatment.”

Reviewer C: “His research is well funded with multiple NIH R01 grants including a new one which was scored at the 4th percentile. Obviously, the amount of research funding is extraordinary at this critical time in govern support of research.”

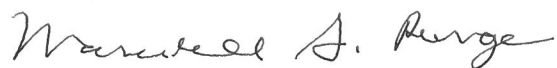
Reviewer D: “His work in developing nanoparticle drug delivery systems has permitted the introduction of new medical treatments for endocrine malignancies. Dr. Cohen’s discoveries rank him in the top echelon of his peers with regards to scholarly and meaningful academic productivity. His research has permitted him to cross the boundaries of pharmacology, oncology and endocrinology to promote translational scientific advancements.”

Reviewer E: “Dr. Cohen has grown as a leader in endocrine surgery and his research has made an important impact in the fields of nanomedicine and in the targeting HSP90...In my opinion, he stands in the top 5% in relation to others in his peer group working in the same field. Dr. Cohen is highly committed and dedicated to developing new drug treatments for cancer patients. His expertise is sought after by investigators around the world...”

Reviewer F: “Clinically, Dr. Cohen has taken a leadership role in resident education, acting as the mentor for multiple residents and fellows. He has done extensive work in the development of new curricula and course material with a focus on helping students and researchers in setting up their labs and translating their work into surgical technologies. In sum, Dr. Cohen’s commitment to medical student education is well known and serves as an example for other surgeons.”

Summary of Recommendation:

Dr. Cohen is nationally and internationally respected for his seminal contributions in translational cancer research. He is an excellent surgeon and distinguished educator. I strongly recommend Mark S. Cohen, M.D. for promotion to professor of surgery, with tenure, Department of Surgery, and professor of pharmacology, without tenure, Department of Pharmacology, Medical School.



Marschall S. Runge, M.D., Ph.D.
Executive Vice President for Medical Affairs
Dean, Medical School

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