

STEVEN GEORGE OAKES, Ph.D. 2023

I. CONTACT INFORMATION:

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Madison, Wisconsin 53717

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II. EDUCATION:

Training:

Mayo Clinic and Mayo Graduate School of Medicine (1986-1988)

Rochester, Minnesota

Senior Postdoctoral Fellow: Pharmacology and Oncology

Postdoctoral Fellow: Pharmacology and Oncology

University of Minnesota, Minneapolis (1982-1986)

Mayo Clinic and Mayo Graduate School of Medicine

Minneapolis, Minnesota

Rochester, Minnesota Ph.D.

Major: Pharmacology

Minor: Neuroscience

Language: Statistics

University of Minnesota - Duluth School of Medicine (1980-1982)

Duluth, Minnesota

M.S. Major: Physiology (transferred)

Minor: Chemistry

University of Minnesota - Duluth School of Medicine (1978-1980)

Duluth, Minnesota Adult

Special Student

Dartmouth College (1973-1977)

Hanover, New Hampshire

B.A. Double Major: Biochemistry

Psychology

Educational Support

NIH Postdoctoral Cancer Training Grant, 1986-1988

NIH Predoctoral Pharmacology Training Grant, 1982-1985

University of Minnesota Regent's Scholar, 1978-1980

Dartmouth Northwest Regional Scholar, 1973-1977

Alworth Scholar, 1973-1977

National Presbyterian Scholar, 1973

III. WORK EXPERIENCE

Primary positions

**UNIVERSITY OF WISCONSIN
SCHOOL OF PHARMACY
Pharmaceutical Sciences Division
Madison, WI**

**2011 (July) to 2018
(July) retired**

Clinician-Teacher Assistant Professor (CT)

- Design, prepare and deliver lectures on a wide variety of subjects emphasizing the underlying anatomy, physiology, biochemistry and pathophysiology to understand the action of pharmaceuticals. Coordinate courses and prepare, administer and score exams and assessment tools to instruct PharmD students, undergraduate students, graduate students and industrial scientists/technicians.
- Work to design curriculum changes and assessment procedures to meet the ACPE Standards and accreditation evaluation recommendations through work on the CCAP assessment committee.
- Work to develop and assess innovative educational techniques and approaches to generate the best possible outcomes for students.
- Serve as Director of the of the Pharmacology and Toxicology B.S. program, Chair of the PharmTox Oversight and Admissions Committee and Director of the External Advisory Board to determine new curricular and supplemental additions to the program.
- Present and publish findings to disseminate neWInformation to other educators.
- Increase the role of research and alternative didactic offerings to students in the PharmTox program.
- Work with METC and MCP graduate programs to provide educational opportunities to PhD students.

**UNIVERSITY OF WISCONSIN
SCHOOL OF PHARMACY
Pharmaceutical Sciences Division
Madison, WI**

2009 to 2011 (July)

Assistant Professor (CHS)

- Design, prepare and deliver lectures on a wide variety of subjects emphasizing the underlying anatomy, physiology, biochemistry and pathophysiology to understand the action of pharmaceuticals. Coordinate courses and prepare, administer and score exams and assessment tools to instruct PharmD students, nursing students, physician assistant students, undergraduate students, graduate students and industrial scientists/technicians.
- Work to design curriculum changes and assessment procedures to meet the ACPE Standards 2007 and accreditation evaluation recommendations from the 2006 site visit through work on the assessment committee.
- Chair the scholarship committee charged with administering over a quarter of a million dollars to support pharmacy students.
- Take a directing role in the administration and operation of the pharmacology and toxicology B.S. program and serve as a member on the Pharm/Tox admission and oversight committee.
- Publish articles and/or books related to the education of professional students.
- Selected for the Student Senate Teaching Excellence Award 2009-2010 for the University of Wisconsin School of Pharmacy.
- Appointed to the graduate faculty of the Molecular and Environmental Toxicology Center at the University of Wisconsin.
- Appointed Director, Pharmacology and Toxicology B.S. program at the University of Wisconsin.

**UNIVERSITY OF WISCONSIN
SCHOOL OF PHARMACY
Pharmaceutical Sciences Division
Madison, WI**

2005 to 2009 (July)

Lecturer, Senior Lecturer

Design, prepare and deliver lectures on a wide variety of subjects emphasizing the underlying anatomy, physiology, biochemistry and pathophysiology to understand the action of pharmaceuticals. Coordinate courses and prepare, administer and score exams and assessment tools to instruct PharmD students, nursing students, physician assistant students, undergraduate students and industrial scientists/technicians. Work to design curriculum changes and assessment procedures to meet the ACPE Standards 2007 and accreditation evaluation recommendations from the 2006 site visit through work on both the curriculum and assessment committees.

- Instituted student-centered, web-based instruction utilizing Learn@UW (an institutional equivalent of Blackboard) with online videos, animations, lecture questions, handouts, article and chapter postings, literature links and audio/video lecture recordings.
- Developed powerpoint presentations containing custom animations and embedded videos/movies utilizing a student interactive classroom performance system (CPS) to allow real-time assessment of student comprehension of lecture material through questions utilized during the lecture.
- Developed standardized handouts and study guides clearly defining the material for which the student was responsible. All handouts contained a list of abbreviations, glossary, outline and table of contents and supportive readings. Typically 10 to 20 textbooks/primary sources were utilized to minimize the student need for outside reading.
- Incorporated the use of online quizzes through Learn@UW to supplement student evaluation in addition to in-class written exams.

- Integrated and sequenced material from pharmacotherapy, biochemistry, medicinal chemistry, pharmacogenomics and basic science first year courses with course lecture material through a combination of discussion with other professors, class attendance or study of the lecture handouts to eliminate redundancy and improve student learning.
- Expanded the role and education of graduate student teaching assistants by introducing training and preparation of exam questions, operation of the on-line resources and handout and lecture preparation and presentation.
- Worked with a third year pharmacy student in an advanced independent study course producing an educational presentation about the abuse of performance enhancing drugs that was presented to young athletes at Edgewood High School in Madison, Wisconsin.
- Selected by students as the "Teacher of the Year 2008" for the 3rd year pharmacy program.
- Selected to by students of the 4th year pharmacy program in 2008 to hood PharmDs at the graduation ceremony.
- Organized and scheduled lectures and lecturers for 14 drug action courses for the upcoming two academic years.
- Served as a representative for the UW SOP at the 2007 AACP Institute to inform and educate university administrators about the ACPE Standards 2007.
- Took a lead role on the curriculum committee in becoming intimately knowledgeable about the contents of the UW SOP curriculum and the curriculum structure of the top 15 schools in the United States to facilitate course integration and movement of courses to the prepharmacy years to meet the ACPE Standards 2007.
- Worked on the assessment committee to incorporate the necessary assessment tools and procedures to meet the ACPE Standards 2007.

UNIVERSITY OF WISCONSIN
SCHOOL OF MEDICINE
Department of Physiology
Madison, WI

2002 to 2005

Researcher

Designed and performed experiments employing patch clamp recording and second messenger manipulations of excised and tissue-cultured nerve cells of genetically altered mice to determine differences in K⁺ channel subunit contribution to K⁺ currents roles in thermosensitivity and myelination. Additional work with sciatic nerve and diaphragm neuromuscular preparations. Wrote and submitted an RO1 grant to NIH with Dr. Bill Chiu to identify mechanisms of thermosensitivity in sensory neurons. Worked in pioneering an application of microelectrode array systems coupled with Microfluidics to identify subpopulations of dissociated sensory neurons with Dr. Justin Williams of Biomedical Engineering.

DRUG AND DEVICE CONSULTING
Madison, WI

1998 to 2002

Consultant

Consulted with companies in the biotech, medical device and pharmaceutical industry. Researched literature and produced review articles, bibliographies and

databases. Designed clinical studies, statistically analyzed and interpreted study results for large database studies. Prepared results for presentation, professional education, regulatory/marketing submissions and publication.

- Produced abstracts and slide presentations for six national and international meetings including a presentation receiving award for best presentation
- Designed, collected and analyzed data for eight clinical studies leading to eight publications and two major marketing presentations

- Designed and analyzed three survey studies for evaluating patient and customer satisfaction producing a database program for continual data handling and analysis update

BELL LABORATORIES, INC.

1995 to 1998

Madison, WI

Technical
Director

Reported to President/Owner of privately held 10+ million dollar specialty chemical and product manufacturer. Responsible for leadership of R&D. Managed the analytical chemistry laboratory (GLP), toxicological animal testing laboratory (GLP) and outside contract laboratories. Directed regulatory affairs including agency submissions (U.S., Canada, and Europe), compliance, audits, complaints, and direct communication with regulatory representatives of the EPA, USDA, DNR, DOT, TSCA and state agencies. Lobbied elected officials and federal agencies to change industry standards. Managed scale-up and manufacturing of chemicals and supervising the quality assurance/control department. Managed 13 technical people (chemists, biologists, regulatory and quality professionals) working on as many as 15 simultaneous projects.

- Managed synthesis and assay development, chemical and toxicological testing, submission of the technical anticoagulant brodifacoum and products in the U.S. and Canada (approved)
- Managed synthesis, assay development and U.S. submission for the neurotoxin bromethalin (approved)
- Negotiated with EPA to eliminate over \$300,000 of required testing. Conducted successful EPA and USDA audits
- Member of the Strategic Group (President/Owner and 7 department heads) that designed, guided and monitored company direction and policy

AUGUSTINE MEDICAL, INC.

1992 to 1994

Eden Prairie, MN

Director of Scientific Affairs

Reported to CEO/Owner of "Inc. 100" privately held 20+ million dollar manufacturer of medical devices. Responsible for supervising R&D testing laboratories for all developmental, quality control and contract testing (GLP) for marketing and FDA submissions. Supervised graduate student researchers in heat transfer and wound healing through the University of Minnesota. Designed, created all forms, managed and monitored all clinical research projects (GCP) and negotiated with investigators. Directed a new product team. Managed a budget of \$500,000+ and supervised 12 scientists.

- Team leader for new product development from background literature research, patent application, market research (including survey research), DOE and process validation and clinical testing for FDA submission (approved)
- Worked closely with the regulatory group to ensure meeting cGMP, quality requirements, UL requirements and corrected previous shortcomings following FDA audits
- Monitored all clinical and outside laboratory studies resulting in over 15 publications in refereed journals
- Designed, analyzed and wrote testing FDA submissions for five devices (approved)

EASTERN VIRGINIA SCHOOL OF MEDICINE

1988 To 1992

Department of Pharmacology

Norfolk, VA

Assistant Professor

Wrote and submitted research grants to obtain funding. Performed research in neuropharmacology/neurophysiology, cardiovascular pharmacology/physiology, analytical assays, oncology/chemotherapeutic agents and receptor pharmacology using mammalian cell culture and small animals. Published and presented findings. Taught courses in central nervous system pharmacology, neurosciences, receptor pharmacology, psychopharmacology and neuropharmacology. Supervised student research and fulfilled committee responsibilities.

M AYO CLINIC AND GRADUATE SCHOOL OF MEDICINE

1986 to 1988

Departments of Pharmacology and Oncology

Rochester, MN

Postdoctoral Fellow

Performed research in neuropharmacology/neurophysiology, cardiovascular pharmacology/physiology, analytical assays, oncology/chemotherapeutic agents and receptor pharmacology using mammalian cell culture and small animals. Published and presented findings.

Ancillary positions

NATIONAL COLLEGE FOR DUI DEFENSE

2016 to now

Montgomery, AL

Faculty

FBI

2015 to 2017

Madison, WI

Contributor

THIRD WAVE SYSTEMS Minneapolis, MN <u>Consultant</u>	1994 to 1995
MINNEAPOLIS SCHOOL OF ANESTHESIA St. Louis Park, MN <u>Adjunct Assistant Professor</u>	1994 to 1995
ST. MARY'S UNIVERSITY Winona, MN <u>Adjunct Assistant Professor</u>	1994 to 1995
HEILEG, McKENRY, FRAIM AND LOLLAR PC Norfolk, VA <u>Medical Malpractice Consultant</u>	1989 to 1992
OLD DOMINION UNIVERSITY – BIOLOGY Norfolk, VA <u>Adjunct Assistant Professor</u>	1989 to 1992
EISENBERG LAW OFFICES SC Madison, WI <u>Expert</u> <u>Witness</u>	2010 to now
STATE OF WISCONSIN OFFICE OF THE PUBLIC DEFENDER Madison, WI <u>Expert</u> <u>Witness</u>	2010 to now
CROOKS, LOW AND CONNELL SC Wausau, WI <u>Expert</u> <u>Witness</u>	2012 to now
CUNNINGHAM LAW FIRM Beloit, MN <u>Witness</u>	2016 to now
RICHIE, WICKSTROM AND WACHS Eau Claire, WI <u>Witness</u>	2016 to now
LIMBECK LAW OFFICE Sheboygan, WI <u>Witness</u>	2017 to now

Consultant/Witness with multiple Law Firms throughout Wisconsin.

IV. TEACHING APPOINTMENTS

Courses

Drug Abuse and Chemical Dependence" at the University of Wisconsin School of Pharmacy (DPH-3 students-elective) Course coordinator. Lectures given in

introduction: principles/biological basis of substance abuse/dependence; alcohol; barbiturates and related agents; benzodiazepines, inhalants, GHB, GBL, BD; opioids; psychedelics/entactogens; dissociatives (PCP/ketamine/dextromethorphan); cocaine, amphetamines and other stimulants; anabolic steroids; management of cocaine dependence; management of alcohol dependence, management of opioid dependence, abuse of prescription and OTC drugs, behavioral addictions, impaired health care professionals, Spring 2017.

“Toxicology II” at the University of Wisconsin (Toxicology graduate students, Pharmacology-Toxicology undergraduates) Course coordinator. Lectures in hematopoiesis, hematologic toxicology, modern problems in toxicology, Spring 2017.

“Pharmacology II” at the University of Wisconsin School of Pharmacy (DPH-2 students- required) Lectures given in hematopoiesis, growth factors, anemia due to iron deficiency, anemia due to vitamin B₁₂ and folic acid deficiency, basic immunology and immunopharmacology, immunosuppressive and immunomodulatory drugs, vitamin K, anticoagulants, antiplatelet agents, thrombolytic agents, Spring 2017.

“Pharmacology I” at the University of Wisconsin School of Pharmacy (718-521, DPH-2 students-required) Course coordinator. Lectures given in components of the PNS/ organization of the ANS, ANS effects on organ systems, co-transmission in the ANS/ Non-adrenergic non-cholinergic transmission/ enteric nervous system overview/ cholinergic neurotransmission overview, cholinergic receptors and subtypes/ cholinergic receptor signaling mechanisms/ cholinergic receptor agonists, cholinergic receptor agonists / cholinergic receptor antagonists, drugs acting at autonomic ganglia/ neuromuscular blocking agents/ cholinesterase inhibitors, adrenergic neurotransmission overview/ adrenergic receptors and signaling mechanisms/ mixed alpha and beta receptor agonists, alpha receptor agonists/ beta receptor agonists, beta receptor agonists/ indirectly acting sympathomimetic amines and those with mixed direct and indirect action, alpha receptor antagonists/ beta receptor antagonists, beta receptor antagonists, local anesthetics, introduction to central nervous system pharmacology/ drug abuse and dependence/ general anesthetics, opioid analgesics, treatment of Alzheimer’s disease, antipsychotic agents, antidepressant agents, antimanic agents and mood stabilizers, antianxiety agents and hypnotics, antiparkinsonism agents, CNS stimulants/anorexics, alcohol, Fall 2016.

“Laboratory Techniques in Pharmacology and Technology” at the University of Wisconsin School of Pharmacy (718-558, upper-class undergraduate majors in the pharmacology/toxicology program) Lecture/laboratory given in understanding scientific method and research, literature search and review, experimental design, statistical approaches to experimentation, reading and writing scientific publications, corporate day, methods for evaluating agents for potential anticonvulsant activity (mice), Fall 2016.

“A Practical Review of Cardiovascular Physiology, Pharmacology and Safety” at the University of Wisconsin SOP Pharmacy for Professional Development (industry professionals worldwide) Lectures given in physiological considerations of the cardiovascular system I, physiological considerations of the cardiovascular system II, chronic heart failure (webinar), hormones affecting cardiovascular physiology (webinar), kidneys and fluid regulation in cardiovascular function (webinar), blood pressure regulations. Fall 2016.

“Drug Abuse and Chemical Dependence” at the University of Wisconsin School of Pharmacy (DPH-3 students-elective) Course co-coordinator. Lectures given in

introduction: principles/biological basis of substance abuse/dependence; alcohol; barbiturates and related agents; benzodiazepines, inhalants, GHB, GBL, BD; opioids; psychedelics/entactogens; dissociatives (PCP/ketamine/dextromethorphan); cocaine, amphetamines and other stimulants; anabolic steroids; management of cocaine dependence; management of alcohol dependence, management of opioid dependence, Spring 2016.

“Toxicology II” at the University of Wisconsin (Toxicology graduate students, Pharmacology-Toxicology undergraduates) Course coordinator. Lectures in hematologic toxicology, hematopoiesis, modern problems in toxicology, Spring 2016.

“Pharmacology II” at the University of Wisconsin School of Pharmacy (DPH-2 students- required) Lectures given in hematopoiesis, growth factors, anemia due to iron deficiency, anemia due to vitamin B₁₂ and folic acid deficiency, basic immunology and immunopharmacology, immunosuppressive and immunomodulatory drugs, vitamin K, anticoagulants, antiplatelet agents, thrombolytic agents, hypolipidemic drugs, gastrointestinal pharmacology, Spring 2016.

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cardiovascular system I, physiological considerations of the cardiovascular system II, chronic heart failure (webinar), hormones affecting cardiovascular physiology (webinar). Spring 2014.

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“Nonprescription Medications” at the University of Wisconsin School of Pharmacy (718- 638, DPH-3 students-elective) Course co-coordinator. Lectures given in history and regulation of over-the-counter medications, internal analgesics/antipyretics, topicals: local anesthetics, hydrocortisone, antipruritics, counter-irritants, cough/cold/allergy/asthma, stimulants/sleep aids/motion sickness/antiemetics, Fall 2013.

“Laboratory Techniques in Pharmacology and Technology” at the University of Wisconsin School of Pharmacy (718-558, upper-class undergraduate majors in the pharmacology/toxicology program) Lecture/laboratory given in methods for evaluating agents for potential anticonvulsant activity (mice), Fall 2013.

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“Pharmacology II” at the University of Wisconsin School of Pharmacy (DPH-2 students- required) Lectures given in hematopoiesis, growth factors, anemia due to iron deficiency, anemia due to vitamin B₁₂ and folic acid deficiency, basic immunology and immunopharmacology, immunosuppressive and immunomodulatory drugs, vitamin K, anticoagulants, antiplatelet agents, thrombolytic agents, hypolipidemic drugs, gastrointestinal pharmacology, Spring 2011.

“Pharmacology I” at the University of Wisconsin School of Pharmacy (718-521, DPH-2 students-required) Course coordinator. Lectures given in components of the PNS/ organization of the ANS, ANS effects on organ systems, co-transmission in the ANS/ Non-adrenergic non-cholinergic transmission/ enteric nervous system overview/ cholinergic neurotransmission overview, cholinergic receptors and subtypes/ cholinergic receptor signaling mechanisms/ cholinergic receptor agonists, cholinergic receptor agonists / cholinergic receptor antagonists, drugs acting at autonomic ganglia/ neuromuscular blocking agents/ cholinesterase inhibitors, adrenergic neurotransmission overview/ adrenergic receptors and signaling mechanisms/ mixed alpha and beta receptor agonists, alpha receptor agonists/ beta receptor agonists, beta receptor agonists/ indirectly acting sympathomimetic amines and those with mixed direct and indirect action, alpha receptor antagonists/ beta receptor antagonists, beta receptor antagonists, local anesthetics, introduction to central nervous system pharmacology/ drug abuse and dependence/ general anesthetics, opioid analgesics, treatment of Alzheimer’s disease, antipsychotic agents, antidepressant agents, antimanic agents and mood stabilizers, antianxiety agents and hypnotics, antiparkinsonism agents, CNS stimulants/anorexics, alcohol, Fall 2010.

“Nonprescription Medications” at the University of Wisconsin School of Pharmacy (718- 638, DPH-3 students-elective) Course co-coordinator. Lectures given in history and regulation of over-the-counter medications, internal analgesics/antipyretics, topicals: local anesthetics, hydrocortisone, antipruritics, counter-irritants, cough/cold/allergy/asthma, stimulants/sleep aids/motion sickness/antiemetics, Fall 2010.

“Laboratory Techniques in Pharmacology and Technology” at the University of Wisconsin School of Pharmacy (718-558, upper-class undergraduate majors in the pharmacology/toxicology program) Lecture/laboratory given in methods for evaluating agents for potential anticonvulsant activity (mice), Fall 2010.

“Drug Abuse and Chemical Dependence” at the University of Wisconsin School of Pharmacy (DPH-3 students-elective) Course co-coordinator. Lectures given in introduction: principles/biological basis of substance abuse/dependence; alcohol; barbiturates and related agents; benzodiazepines, inhalants, GHB, GBL, BD; opioids; psychedelics/entactogens; dissociatives (PCP/ketamine/dextromethorphan); cocaine, amphetamines and other stimulants; anabolic steroids; management of cocaine dependence; management of alcohol dependence, Spring 2010.

“Toxicology II” at the University of Wisconsin (Toxicology graduate students, Pharmacology-Toxicology undergraduates) Course coordinator. Lectures in hematologic toxicology, Spring 2010.

“Pharmacology II” at the University of Wisconsin School of Pharmacy (DPH-2 students- required) Lectures given in hematopoiesis, growth factors, anemia due to iron deficiency, anemia due to vitamin B₁₂ and folic acid deficiency, basic immunology and immunopharmacology, immunosuppressive and immunomodulatory drugs, vitamin K, anticoagulants, antiplatelet agents, thrombolytic agents, hypolipidemic drugs, gastrointestinal pharmacology, Spring 2010.

“Basic Pharmacology” at the University of Wisconsin School of Pharmacy Extension Services in Pharmacy (industrial scientists nationwide) Course co-coordinator . Lectures given in pharmacodynamics, absorption, distribution, elimination, receptors and signal transduction, hemostasis and thrombosis, diuretics, hypolipidemics, immunopharmacology, Spring 2010

“Pharmacology I” at the University of Wisconsin School of Pharmacy (718-521, DPH-2 students-required) Course coordinator. Lectures given in components of the PNS/ organization of the ANS, ANS effects on organ systems, co-transmission in the ANS/ Non-adrenergic non-cholinergic transmission/ enteric nervous system overview/ cholinergic neurotransmission overview, cholinergic receptors and subtypes/ cholinergic receptor signaling mechanisms/ cholinergic receptor agonists, cholinergic receptor agonists / cholinergic receptor antagonists, drugs acting at autonomic ganglia/ neuromuscular blocking agents/ cholinesterase inhibitors, adrenergic neurotransmission overview/ adrenergic receptors and signaling mechanisms/ mixed alpha and beta receptor agonists, alpha receptor agonists/ beta receptor agonists, beta receptor agonists/ indirectly acting sympathomimetic amines and those with mixed direct and indirect action, alpha receptor antagonists/ beta receptor antagonists, beta receptor antagonists, local anesthetics, introduction to central nervous system pharmacology/ drug abuse and dependence/ general anesthetics, opioid analgesics, treatment of Alzheimer’s disease, antipsychotic agents, antidepressant agents, antimanic agents and mood stabilizers, antianxiety agents and hypnotics, antiparkinsonism agents, CNS stimulants/anorexics, alcohol, Fall 2009.

“Pharmacology III” at the University of Wisconsin School of Pharmacy (718-623, DPH-3 students-required) Lectures given in introduction to endocrine pharmacology, insulin action, glucagon, diabetes mellitus, insulin, oral hypoglycemics, thyroid action, antithyroid drugs, calcium homeostasis, parathyroid hormone and vitamin D, calcium homeostasis, calcitonin and diphosphonates, estrogens, progestins, contraception, drugs affecting uterine motility, Fall 2009.

“Nonprescription Medications” at the University of Wisconsin School of Pharmacy (718-638, DPH-3 students-elective) Course co-coordinator. Lectures given in history and regulation of over-the-counter medications, internal analgesics/antipyretics, topicals: local anesthetics, hydrocortisone, antipruritics, counter-irritants, cough/cold/allergy/asthma, stimulants/sleep aids/motion sickness/antiemetics, Fall 2009.

“Laboratory Techniques in Pharmacology and Technology” at the University of Wisconsin School of Pharmacy (718-558, upper-class undergraduate majors in the pharmacology/toxicology program) Lecture/laboratory given in methods for evaluating agents for potential anticonvulsant activity (mice), Fall 2009.

“Drug Abuse and Chemical Dependence” at the University of Wisconsin School of Pharmacy (DPH-3 students-elective) Course co-coordinator. Lectures given in introduction: principles/biological basis of substance abuse/dependence; alcohol; barbiturates and related agents; benzodiazepines, inhalants, GHB, GBL, BD; opioids; psychedelics/entactogens; Dissociatives (PCP/ketamine/dextromethorphan); cannabis; cocaine, amphetamines and other stimulants; anabolic steroids; management of cocaine dependence; management of alcohol dependence, Spring 2009.

“Basic Pharmacology” at the University of Wisconsin School of Pharmacy Extension Services in Pharmacy (industrial scientists nationwide) Course co-coordinator. Lectures given in pharmacodynamics, absorption, distribution, elimination, receptors and signal transduction, hemostasis and thrombosis, diuretics, hypolipidemics, immunopharmacology, Spring 2009

“Pharmacology III” at the University of Wisconsin School of Pharmacy (DPH-3 students- required) Course co-coordinator. Lectures given in introduction to endocrine pharmacology, insulin action, glucagon, diabetes mellitus, insulin, oral hypoglycemics, thyroid action, antithyroid drugs, calcium homeostasis, parathyroid hormone and vitamin D, calcium homeostasis, calcitonin and diphosphonates, estrogens, progestins, contraception, drugs affecting uterine motility, Fall 2008.

“Nonprescription Medications” at the University of Wisconsin School of Pharmacy (DPH-3 students-elective) Course co-coordinator . Lectures given in history and regulation of over-the-counter medications, internal analgesics/antipyretics, topicals: local anesthetics, hydrocortisone, antipruritics, counter-irritants, cough/cold/allergy/asthma, stimulants/sleep aids/motion sickness/antiemetics, Fall 2008

“Survey of Pharmacology” at the University of Wisconsin School of Pharmacy (nursing, physician assistant, kinesiology students-required) Lectures given in steroids, pancreas and thyroid pharmacology, gastrointestinal pharmacology/cholesterol, cancer chemotherapeutics, inflammatory diseases, antipsychotics, analgesics, Fall 2008

“Laboratory Techniques in Pharmacology and Technology” at the University of Wisconsin School of Pharmacy (upper-class undergraduate majors in the pharmacology/toxicology program) Lecture/laboratory given in methods for evaluating agents for potential anticonvulsant activity (mice), Fall 2008

“Basic Pharmacology” at the University of Wisconsin School of Pharmacy Extension Services in Pharmacy (Covance scientists Wisconsin) Course co-coordinator . Lectures given in pharmacodynamics and measurement of drug action, dynamics of drug absorption, distribution and elimination, receptor signaling, immunology and immunopharmacology, immunosuppression, anti-inflammatory drugs (NSAIDs, corticosteroids, novel inflammatory targets), antihistamines, Summer 2008

“Basic Pharmacology” at the University of Wisconsin School of Pharmacy Extension Services in Pharmacy (industrial scientists nationwide) Course co-coordinator . Lectures given in pharmacodynamics, absorption, distribution, elimination, receptors and signal transduction, hemostasis and thrombosis, diuretics, hypolipidemics, immunopharmacology, Spring 2008

“Pharmacology II” at the University of Wisconsin School of Pharmacy (DPH-2 students- required) Lectures given in hematopoiesis, growth factors, anemia due to iron deficiency, anemia due to vitamin B₁₂ and folic acid deficiency, basic immunology and immunopharmacology, immunosuppressive and immunomodulatory drugs, anti-Inflammatory drugs: Steroids, anti-Inflammatory drugs: ASA, NSAIDs and leukotriene antagonists, gout treatment, antihistamines, vitamin K, anticoagulants, antiplatelet agents, thrombolytic agents, hypolipidemic drugs, gastrointestinal pharmacology, Spring 2008.

“Pharmacogenomics and Biotechnology Medicine” at the University of Wisconsin School of Pharmacy (DPH-3 students-required) Course co-coordinator . Lectures given in introduction to pharmacogenomics and biotechnology medicine, biotechnology part I: recombinant DNA basics, biotechnology part II - recombinant DNA basics, biopharmaceutical recombinant proteins: insulin, biopharmaceutical recombinant proteins: human growth hormone, biopharmaceutical recombinant proteins: erythropoietin and granulocyte colony stimulating factor, biopharmaceutical

recombinant proteins: interleukins and interferons, immunity and antigen recognition, recombinant vaccines, recombinant monoclonal antibodies, gene therapy, RNAi and aptamers, Fall 2007

“Nonprescription Medications” at the University of Wisconsin School of Pharmacy (DPH-3 students-elective) Course co-coordinator . Lectures given in history and regulation of over-the-counter medications, internal analgesics/antipyretics, topicals: local anesthetics, hydrocortisone, antipruritics, counter-irritants, cough/cold/allergy/asthma, stimulants/sleep aids/motion sickness/antiemetics Fall 2007

“Survey of Pharmacology” at the University of Wisconsin School of Pharmacy (nursing, physician assistant, kinesiology students-required) Lectures given in steroids, pancreas and thyroid pharmacology, gastrointestinal pharmacology/cholesterol, cancer chemotherapeutics, inflammatory diseases, antipsychotics, analgesics, Fall 2007

“Laboratory Techniques in Pharmacology and Technology” at the University of Wisconsin School of Pharmacy (upper-class undergraduate majors in the Pharmacology/Toxicology program) Lecture/laboratory given in Fall 2007

“Basic Pharmacology” at the University of Wisconsin School of Pharmacy Extension Services in Pharmacy (industrial scientists nationwide) Course co-coordinator . Lectures given in hemostasis and thrombosis, diuretics, hypolipidemics, immunopharmacology, Spring 2007

“Advanced Independent Study” at the University of Wisconsin School of Pharmacy (DPH3 student) The abuse of performance enhancing drugs by high school athletes. Spring 2007

“Pharmacology II” at the University of Wisconsin School of Pharmacy (DPH-2 students- required) Lectures given in hematopoiesis, growth factors, anemia due to iron deficiency, anemia due to vitamin B₁₂ and/or folic acid deficiency, basic immunology and immunopharmacology, immunosuppressive and immunomodulatory drugs, anti- Inflammatory drugs: Steroids, anti-Inflammatory drugs: ASA, NSAIDs and leukotriene antagonists, gout treatment, antihistamines, vitamin K, anticoagulants, antiplatelet agents, thrombolytic agents, hypolipidemic drugs, Spring 2007.

“Advanced Independent Study” at the University of Wisconsin School of Pharmacy (DPH3 student) The abuse of performance enhancing drugs by high school athletes. Fall 2006

“Survey of Pharmacology” at the University of Wisconsin School of Pharmacy (nursing, physician assistant, kinesiology students-required) Lectures given in steroids, pancreas and thyroid pharmacology, gastrointestinal pharmacology/cholesterol, cancer chemotherapeutics, inflammatory diseases, antipsychotics, analgesics, Fall 2006

“Pharmacology II” at the University of Wisconsin School of Pharmacy (DPH-2 students- required) Lectures given in hematopoiesis, growth factors, anemia due to iron deficiency, anemia due to vitamin B₁₂ and folic acid deficiency, basic immunology and immunopharmacology, immunosuppressive and immunomodulatory drugs, anti-Inflammatory drugs: Steroids, anti-Inflammatory drugs: ASA, NSAIDs and leukotriene

antagonists, gout treatment, antihistamines, vitamin K, anticoagulants, antiplatelet agents, thrombolytic agents, hypolipidemic drugs, Spring 2006.

"Survey of Pharmacology" at the University of Wisconsin School of Pharmacy (nursing, physician assistant, kinesiology students-required) Lectures given in steroids, pancreas and thyroid pharmacology, gastrointestinal pharmacology/cholesterol, cancer chemotherapeutics, inflammatory diseases, antipsychotics, analgesics, Fall 2005

"Intravenous Anesthetics" in Pharmacology at Minneapolis School of Anesthesia (nurse anesthetist graduate students-required) Lectures given in barbiturates, benzodiazepines, propofol, ketamine, opioids), Spring, 1995.

"Intravenous Anesthetics" in Pharmacology at Minneapolis School of Anesthesia (nurse anesthetist graduate students-required) Lectures given in barbiturates, benzodiazepines, propofol, ketamine, opioids), Spring, 1994.

"Heat Transfer and Therapy" in Biomedical Applications of Heat Transfer at the University of Minnesota, (doctoral graduate students-elective) Lectures given in heat and wound healing, heat and cancer, Spring, 1994.

"Cellular Neuroscience" of Neurosciences at Eastern Virginia Medical School (second messengers, central synaptic transmission, somatosensory physiology), Spring, 1992.

"Psychopharmacology" at Eastern Virginia Medical School, January, 1992.

"Central Nervous System Pharmacology" of Medical Pharmacology at Eastern Virginia Medical School (barbiturates, general anesthetics, antidepressants, neuroleptics, opioids, stimulants, neurotransmitters, benzodiazepines and substances of abuse), 1991-1992.

"Small Group Discussions" of Medical Pharmacology at Eastern Virginia Medical School (all areas), 1991-1992.

"Research in Pharmacology" at Old Dominion University (graduate student), Summer I 1991.

"Research in Pharmacology" at Old Dominion University (graduate student), Summer II 1991.

"Techniques in Pharmacology" at Old Dominion University, Fall 1991.

"Neuropharmacology" at Old Dominion University (graduate students), Fall 1991.

"Psychopharmacology" at Eastern Virginia Medical School (4th year medical students-elective), November, 1991.

"Psychopharmacology" at Eastern Virginia Medical School (4th year medical students-elective), October, 1991.

"Psychopharmacology" at Eastern Virginia Medical School (4th year medical students-elective), September, 1991.

"Psychopharmacology" at Eastern Virginia Medical School (4th year medical students-elective), August, 1991.

"Psychopharmacology" at Eastern Virginia Medical School (4th year medical students-elective), January, 1991.

"Central Nervous System Pharmacology" of Medical Pharmacology at Eastern Virginia Medical School (barbiturates, general anesthetics, antidepressants, neuroleptics, opioids, stimulants, neurotransmitters, benzodiazepines and substances of abuse), 1990-1991.

"Small Group Discussions" of Medical Pharmacology at Eastern Virginia Medical School (all areas), 1990-1991.

"Cellular Neuroscience" of Neurosciences at Eastern Virginia Medical School (1st year medical students), (second messengers, central synaptic transmission, somatosensory physiology), Spring, 1991.

"Central Nervous System Pharmacology" of Medical Pharmacology at Eastern Virginia Medical School (2nd year medical students), (barbiturates, general anesthetics, antidepressants, neuroleptics, opioids, stimulants), 1989-1990.

"Small Group Discussions" of Medical Pharmacology at Eastern Virginia Medical School (all areas), 1989-1990.

"Neurophysiology" of General Physiology at University of Minnesota-Duluth, School of Medicine (upper-class undergraduates), (ionic basis of the resting potential, ionic basis of the action potential, nerve conduction, synaptic transmission), Spring, 1980.

"Neurophysiology" of General Physiology at University of Minnesota-Duluth, School of Medicine (upper-class undergraduates), (ionic basis of the resting potential, ionic basis of the action potential, nerve conduction, synaptic transmission), Spring, 1979.

Directed Student Research

"Comparison of forced-air warming devices with an instrumented, fiberglass mannequin". National Science Foundation/Center for Interfacial Engineering Small Business Program Fellowship (undergraduate student), 1993.

"Development of a calorimetric mannequin". Augustine Fellowship (graduate student), 1993.

"Characteristics of the rate of cutaneous temperature change with blood flow occlusion in a porcine model". Augustine Fellowship (graduate student), 1993.

"Comparison of wound healing methods on porcine wounds". Augustine Fellowships (two graduate students), 1993.

"The role of air flow direction and velocity in forced-air warming device operation". Augustine Fellowship (graduate student), 1993.

"Role of heat and pressure in wound formation in a porcine model". National Science Foundation/Center for Interfacial Engineering Small Business Program Fellowship (undergraduate student), 1992.

"The effects of air jet characteristics on heat transfer". National Science Foundation/Center for Interfacial Engineering Small Business Program Fellowship (graduate student), 1992.

"Super-computer modeling for thermoelectric module design". Augustine Fellowship (graduate student), 1992.

"Neurogenic involvement in IgE-mediated inflammation in murine skin". Graduate Student Research (Master's student) Summer and Fall, 1991.

"Effects of vinca alkaloids on bradykinin-induced increases in calcium concentration in murine neuroblastoma cells". Graduate Student Research (Ph.D. student), Summer 1991.

"Effect of insulin-dependent and noninsulin-dependent diabetic sera on calcium concentrations in murine neuroblastoma cells". Graduate Student Research (Ph.D. student), Summer 1991.

"Role of cyclic guanosine 3', 5'-monophosphate on the histamine-induced desensitization in calcium changes". National Science Foundation Young Scholars Program, Norfolk Magnet School, Summer 1991.

"Progesterone-activated channels in human sperm". Eastern Virginia medical School Summer Research Fellowship Program (2nd year medical student), 1991.

"Cellular basis of diabetic neuropathy". Eastern Virginia Medical School Summer Research Fellowship Program, 1991.

"Channels in human sperm". Medical Student Research (3rd year medical student), 1991.

"Ionic channels in human sperm". Medical Student Research (2nd year medical student), Fall 1991.

"Ionic channels in human sperm". Medical Student Research (1st year medical student), Fall 1991.

"Stimulated platelet and neutrophil calcium concentration changes in response to neuroleptic treatment". Medical Student Research (two 4th year medical students) Fall 1991.

"Effects of ethanol on cell division following *in vitro* fertilization in *Xenopus laevis*". National Science Foundation Young Scholars Program, Norfolk Magnet School, Summer 1990.

"Changes in amino acid transmitters in the hippocampus following electrical stimulation in conscious, microdialyzed rats". Eastern Virginia Medical School Summer Research Fellowship Program (2nd year medical student), 1990.

"Effects of ethanol on cell division following *in vitro* fertilization in tunicates".
National Science Foundation Young Scholars Program, Norfolk Magnet School
(high school student), Summer 1989.

"Effect of ethanol on cell division following *in vitro* fertilization in sea urchins".
National Science Foundation Young Scholars Program, Norfolk Magnet School
(high school student), Summer 1989.

V. RESEARCH ACTIVITIES

Presentations, Seminars and Invited Talks (IT)

"Pharmacology and Pharmacokinetics of Alcohol" Serious Science: Advanced Course in Blood Alcohol Analysis & Trial Advocacy, National College for DUI Defense (NCDD), Fort Collins, CO May 8-13, 2017, (IT)

"Basic Pharmacology and Pharmacodynamics" Serious Science: Advanced Course in Blood Drug Analysis and Trial Advocacy, National College for DUI Defense, (NCCD), Arlington, TX December 9-14, 2016, (IT)

"Pharmacology and DUI Cases" Office of the Wisconsin State Public Defender 2016 Annual Criminal Defense Conference, Milwaukee, WI November 17-18, 2016 (IT)

"The Pharmacology & Toxicology B.S. Program" University of Wisconsin SOP PEOPLE Summer Program, Madison, WI 2013. (IT)

"Done with PowerPoint? Think Again." University of Wisconsin Teaching & Learning Symposium, Madison, WI. 2013. (IT)

"You Don't Know and You Owe" UW PharmTox Graduation Breakfast, Madison, WI. 2013. (IT)

"A Blended Approach Utilizing Computer-Based Virtual Interview Case-Scenarios (VICS) to Improve Nonprescription Medications Recommendations." Self-Care Institute Annual Meeting, Washington, DC.2013. (IT)

"A Virtual Interview Case-Scenario (VICS) and Blended Approach to Improve Student Learning in Making Nonprescription Medication Recommendations" Association of Teacher Educators Summer Conference, Washington, DC. 2013. (IT)

"Drug Classes and Effects on the Heart" University of Wisconsin-Madison Middle School PEOPLE Program, Madison. WI 2013. (IT)

"The Pharmacology & Toxicology B.S. Program" University of Wisconsin SOP PEOPLE Summer Program, Madison, WI 2013. (IT)

"Nonprescription Medications CSCR Application" PPD Data and Dessert University of Wisconsin SOP, Madison, WI 2013. (IT)

"The Last Lecture" Last Lecture Invited Speaker Series (UW School of Pharmacy DPH3 class) Madison, WI. 2012. (IT)

"ENGAGE Situated Learning Award: Pharmacy Case Scenario" DoIT Engage Situated Learning Community Event, Madison, WI. 2012. (IT)

"A Tale of Two Evaluations: Assessment Outcomes from Two Applications of CSCR in Pharmacy Classes" DoIT Engage Situated Learning Community Event, Madison, WI. 2012. (IT)

"Managing Pain with Opiates" International Association of Rehabilitation Professionals – Wisconsin Chapter, Wausau, WI. 2012. (IT)

"Reason to Rise" Rho Chi Installation (UW School of Pharmacy Honor Society), Madison, WI. 2011. (IT)

"Powershow: Using Synchronized, Multiple Displays for Nonprescription Didactic Classes". Nonprescription Medicine Academy, Cincinnati, OH. 2011. (IT)

"Addiction Pharmacology". 20th Annual Heartland PRN Conference, Rockford, IL 2011. (IT)

"Powershow: "Using Synchronized, Multiple Displays for Nonprescription Didactic Classes". 15th Annual NMA Conference, Cincinnati, OH 2011. (IT)

"A technology transfer tool: university research for the benefit of industry". Licensing Executives Society, Minneapolis, MN, 1994. (IT)

"The integration of academic programs and small business R and D". Cooper and Lybrand Tech Tuesday, Minneapolis, MN, 1993. (IT)

"Vinca alkaloids block the bradykinin-induced rise in intracellular calcium ion concentration in murine neuroblastoma cells". Twelfth Annual Seminar of Cancer Researchers in Virginia, Norfolk, VA, 1992. (IT)

"Histamine and calcium-mediated second messenger and electrophysiologic responses". University of Minnesota Department of Anesthesiology, Minneapolis, MN, 1992. (IT)

"Histamine as a neurotransmitter". Psychiatry Grand Rounds, Sentara Norfolk General Hospital, Norfolk, VA, 1991. (IT)

"Oncogenes and signal transduction". Eastern Virginia Medical School Department of Pharmacology, Norfolk, VA, 1991. (IT)

"The effect of growth inhibitors on signal transduction". Pancreatic Cell Regeneration and Growth, Diabetes Institute Workshop, Norfolk, VA, 1991. (IT)

"Progesterone-activated channels in human sperm". Eastern Virginia Medical School Department of Pharmacology, Norfolk, VA, 1991. (IT)

"Anticancer drug, doxorubicin, blocks increase in free intracellular calcium concentration produced by histamine in N1E-115 neuroblastoma cells". Federation of American Societies for Experimental Biology 72nd Annual Meeting, Las Vegas, NV, 1988.

"Histamine-induced intracellular free [calcium ion], inositol phosphates and electrical changes in murine N1E-115 neuroblastoma cells". Merck, Sharp and Dohme R and D, Rahway, NJ, 1988. (IT)

"Doxorubicin blocks the histamine-induced changes in intracellular free calcium concentration". Allergan R and D, Irvine, CA 1988. (IT)

"The effects of ethanol on calcium concentration and currents". University of Colorado Department of Pharmacology, Denver, CO, 1988. (IT)

"Agonist-induced biochemical and electrical alterations in murine neuroblastoma cells". Technical University of Munich Department of Neurology, Munich, Germany, 1988. (IT)

"Histamine-induced intracellular free [calcium], inositol phosphate and electrical changes in murine N1E-115 neuroblastoma cells". Eastern Virginia Medical School Department of Pharmacology, Norfolk, VA, 1988. (IT)

"Calcium ions and inositol phosphates during fertilization". Mayo Clinic Department of Pharmacology, Rochester, MN, 1988.

"Pharmacological alterations of electrically and chemically-gated calcium permeabilities in membranes of excitable neuroblastoma cells". Drake University School of Pharmacy, Des Moines, IA, 1987. (IT)

"Neurotransmitter-induced biochemical and electrical alterations in neuroblastoma cells". Proctor and Gamble R and D, Cincinnati, OH, 1987. (IT)

"Agonist-induced electrical and biochemical changes in differentiated neuroblastoma cells". Campbell University School of Pharmacy, Buis Creek, NC, 1987. (IT)

"Reversible inhibition of the calcium action potential in differentiated neuroblastoma cells by cis-platinum (II) diamminechloride, American Association for Cancer Research 77th Annual Meeting, Los Angeles, CA, 1986.

"Agonists which increase cGMP produce characteristic electrical changes". Smith, Kline and Beckman R and D, King of Prussia, PA, 1986. (IT)

"Electrophysiologic observations of cultured dorsal root ganglia cells infected with herpes simplex virus". Society of Neuroscience 8th Annual Meeting, St. Louis, MO, 1978.

Papers in Professional Journals and Books

Moran PM, Sampene E, Oakes SG, Miranpuri GS, Resnick DK: Immediate administration of COX inhibitors in spinal cord contusion injury and a current review of COX therapy. DOI: 10.15761/MRI.1000122, Med Res Innov, 2017.

Pearce T, Wilson JA, **Oakes SG**, Chiu SY, Williams JC: Integrated microelectrode array and microfluidics for temperature clamp of sensory neurons in culture. Lab Chip, 5(1):97- 101, 2005.

Pearce T, **Oakes SG**, Pope R, Williams JC: Dynamic control of extracellular environment *in vitro* neural recording systems. Conf Proc IEEE Eng Med Biol Soc. 6:4045-4048, 2004.

Oakes SG. Green Medicine: The Environmental Impact of Dialyzer Reprocessing with Renalin". Minntech Corporation, Minneapolis, Minnesota. pp. 1-4. 2000.

Shireman BL, **Oakes SG**, Iazzo PA and Sparrow E: "Laboratory simulations of air jet dynamics found in forced air warming systems". In: "Proceedings of the Sixth International Conference on Environmental Ergonomics" (Frim J, Ducharme MB, Tikuisis P, Eds), Scientific Information Center, Defence & Civil Institute of Environmental Medicine, North York, Ontario, pp. 152-153, 1994.

Seiffert D, **Oakes SG**, Ziaimehr H, Stapf D, Iazzo PA and Sparrow E: "A thermoelectric based forced-air delivery system to induce controlled changes in body temperature". In: "Proceedings of the Sixth International Conference on Environmental Ergonomics" (Frim J, Ducharme MB, Tikuisis P, Eds), Scientific Information Center, Defence & Civil Institute of Environmental Medicine, North York, Ontario, pp. 118-119, 1994.

Kokate J, Leland K, Johnson BA, Kveen G, **Oakes SG**, Sparrow E and Iazzo PA: "Thermoregulation in a porcine model". In: "Proceedings of the Sixth International Conference on Environmental Ergonomics" (Frim J, Ducharme MB, Tikuisis P, Eds), Scientific Information Center, Defence & Civil Institute of Environmental Medicine, North York, Ontario, pp. 158-159, 1994.

Shireman BL, **Oakes SG**, Iazzo PA and Sparrow E: "A heat flux mannequin instrumented with 28 thermal guarded calorimeters. In: "Proceedings of the Sixth International Conference on Environmental Ergonomics" (Frim J, Ducharme MB, Tikuisis P, Eds), Scientific Information Center, Defence & Civil Institute of Environmental Medicine, North York, Ontario, pp. 180-181, 1994.

Blackmore PF, **Oakes SG** and Somers KD: "Altered H1 histamine receptor signaling Balb/3T3 cells by v-K-ras and v-H-ras oncogenes". *Oncogene* 7: 2053-2057, 1992.

Ratzlaff RE, Cavanaugh VJ, Miller GW and **Oakes SG**: "Evidence of a neurogenic component during IgE-mediated inflammation in mouse skin". *J. Neuroimmunol.* 41:89-96, 1992.

Castle MC, Schaeffer J and **Oakes SG**: "Radiation-induced alterations in hippocampal neurochemicals as determined by microdialysis and multi-electrode electrochemical detection". *Eur. J. Pharm.* 183:436, 1990.

Oakes SG, Santone KS, Schlager JJ, Abraham RT and Powis G: "Doxorubicin blocks the increase in intracellular free calcium ion concentration, part of a second messenger system in N1E-115 murine neuroblastoma cells". *J. Pharm. Exper. Ther.* 252:979-983, 1990.

Iazzo PA, Seewald M, **Oakes SG** and Lehmann-Horn F: "The use of fura-2 to estimate myoplasmic calcium ion concentration in human skeletal muscle". *Cell Calcium* 10:151-158, 1989.

Oakes SG, Martin W J, Lisek CA and Powis G: "Incomplete hydrolysis of the calcium indicator fura-2 pentaacetoxymethyl ester (fura-2 AM) by cells". *Analyt. Biochem.* 169:159-166, 1988.

Olsen R, Santone KS, Melder D, **Oakes SG**, Abraham R and Powis G: "An increase in intracellular free calcium ion concentration associated with serum free growth stimulation of Swiss 3T3 fibroblasts by epidermal growth factor in the presence of bradykinin". *J. Biol. Chem.* 263:18030-18035, 1988.

Oakes SG, Iazzo PA, Richelson E and Powis G: "Histamine-induced intracellular free calcium ion, inositol phosphates and electrical changes in murine N1E-115 neuroblastoma cells". J. Pharm Exper. Ther. 247:114-121, 1988.

Pozos RS and **Oakes SG**: "The effect of ethanol on the electrophysiology of calcium channels". In: Recent Developments in Alcoholism (M. Galanter, Ed.), Plenum Press, New York, New York. Volume 5, pp. 327-345, 1987.

Studelska D, **Oakes SG** and Brimijoin W S: "Monoclonal antibodies to rapidly transported, particle-associated antigens of rat sciatic nerve". In: Axonal Transport (R. Smith, Ed.), A.R. Liss, New York, New York. pp. 279-290, 1987.

Oakes SG, Santone KS and Powis G: "Effect of some anticancer drugs on the surface membrane electrical properties of differentiated murine neuroblastoma cells". Journal of the National Cancer Institute, 79:155-161, 1987.

Santone KS, **Oakes SG**, Taylor SR and Powis G: "Anthracycline-induced inhibition of calcium action potential in differentiated murine neuroblastoma cells". Cancer Research, 46:2659-2664, 1986.

Fitzgerald TJ, Repesh LA and **Oakes SG**: "Morphological destruction of cultured cells by attachment of Treponema pallidum". British Journal of Venereal Disease, 58:1-11, 1982.

Repesh LA, Fitzgerald TJ, **Oakes SG** and Pozos RS: "Scanning electron microscopy of the attachment of Treponema pallidum to nerve cells *in vitro*". British Journal of Venereal Disease, 58:211-219, 1982.

Oakes SG, Repesh LA, Pozos RS and Fitzgerald TJ: "Electrophysiologic dysfunction and cellular disruption of sensory neurons during incubation with Treponema pallidum". British Journal of Venereal Disease, 58:220-227, 1982.

Oakes SG and Pozos RS: "Electrophysiologic effects of acute ethanol exposure. I. Alterations in the action potentials of dorsal root ganglia neurons in dissociated culture". Brain Research, 281:243-249, 1982.

Oakes SG and Pozos RS: "Electrophysiologic effects of acute ethanol exposure. II. Alterations in the calcium component of action potentials from sensory neurons in dissociated culture". Brain Research, 281:251-255, 1982.

Oakes SG, Petry RW, Ziegler RJ and Pozos RS: "Electrophysiological changes of HSV- 1 infected dorsal root ganglia neurons in culture". Journal of Neuropathology and Experimental Neurology, 40:380-389, 1981.

Abstracts

Oakes SG, Wallbrandt-Pigarelli D, Bundy CB, Dugdale T, Barnicle A, Morrill JA: "Virtual Interview Case-Scenario (VICS) to Improve Teaching Effectiveness about Nonprescription Medication Recommendations for Older Adults." 2013 Teaching & Learning Symposium. Madison, WI. May 22-23, 2013.

Oakes SG. "Done with PowerPoint? Think Again." University of Wisconsin Teaching & Learning Symposium, Madison, WI. May 22-23, 2013.

Oakes SG. "A Blended Approach Utilizing Computer-Based Virtual Interview Case-Scenarios (VICS) to Improve Nonprescription Medications Recommendations." 2013 APhA Self-Care Institute Annual Meeting, Washington, DC June 13-16, 2013.

Wallbrandt-Pigarelli D, Bundy CB, Dugdale T, Barnicle A, Morrill J, **Oakes SG.** "A Computer-Based Virtual Interview Case-Scenario (VICS) to Improve Student Confidence in Nonprescription Medications Recommendations." 2013 AACP Annual Meeting, Chicago, IL July 13-17, 2013.

Wallbrandt-Pigarelli D, Bundy CB, Dugdale T, Barnicle A, Morrill J, **Oakes SG.** "A Blended Learning Approach to Improve Student Learning in Making Nonprescription Medication Recommendations." 2013 AACP Annual Meeting, Chicago, IL July 13-17, 2013.

Oakes SG, Vardeny O. "Increasing Student Understanding of Treatment and Recovery from Chemical and Behavioral Addictions." 2013 AACP Annual Meeting, Chicago, IL July 13-17, 2013.

Oakes SG, Vardeny O. "Simultaneous Projection of Three Different, Synchronized PowerPoint Presentations to Improve Student Engagement and Learning." 2013 AACP Annual Meeting, Chicago, IL July 13-17, 2013.

Oakes SG. "A Virtual Interview Case-Scenario (VICS) and Blended Approach to Improve Student Learning in Making Nonprescription Medication Recommendations." 2013 Association of Teacher Educators Summer Conference. Washington, DC, August 2-6, 2013.

Oakes SG, Walbrandt Pigarelli D. "Implementation of the Scholar Format in a Virtual Interview Case-Scenario (VICS) to Improve Student Ability in Making Nonprescription Medication Recommendations." 2013 16th Annual Nonprescription Medicines Academy Conference, Cincinnati, OH, September 26-28, 2013.

Oakes, SG: "Powershow: Using Synchronized, Multiple Displays for Nonprescription Didactic Classes". 15th Annual NMA Conference, Cincinnati, OH 2011.

Oakes, SG, Pigarelli, DL: "Establishment of a Required Non-Prescription Medicine Course in a Major Midwestern University School of Pharmacy". 14th Annual NMA Conference, Cincinnati, OH 2010.

Oakes SG, Pearce T, Chiu SY, Willson JA, Williams JC: An integrated microfluidic, microelectrode array to temperature clamp sensory neurons in culture. Program No. 920.25. *Abstract Viewer/Itinerary Planner.* Washington, DC: Society for Neuroscience, 2004. Online.

Oakes SG, Somers KD and Blackmore PF: "Kirsten-ras transformed normal rat kidney (NRK) cells lose vasopressin receptors". *FASEB J.*, 5:A884, 1991.

Wasilenko W, Blackmore PF and **Oakes SG:** "Exogenous ATP fails to modulate the growth of src-transformed cells". *Proceedings of the Annual Meeting of the American Association for Cancer Research*, 32:314, 1991.

Wasilenko W, Blackmore PF, **Oakes SG** and Afflerbach C: "Growth regulatory properties of ATP". Eleventh Annual American Cancer Society Division Symposium on Basic and Clinical Cancer Research, 1991.

Oakes SG, Blackmore PF and Somers, KD: "K-ras transformed balb-C3T3 cells express H1 receptors coupled to increases in intracellular calcium ion concentration not found in normal H-ras transformed cells". *FASEB J.*, 4:A1208, 1990.

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Powis G and **Oakes SG**: "Doxorubicin blocks the increase in intracellular calcium ion concentration produced by histamine in N1E-115 neuroblastoma cells". *Proceedings of the Annual Meeting of the American Association for Cancer Research*, 29:301, 1988.

Oakes SG, Powis G and Abraham RT: "The anticancer drug doxorubicin blocks the increase in free calcium ion concentration produced by histamine in N1E-115 neuroblastoma cells". *Federation Proceeding Abstracts*, 47:1001, 1988.

Oakes SG, Iazzo PA and Powis G: "Histamine transiently increases intracellular calcium ion concentration in differentiated N1E-115 neuroblastoma cells". *Pharmacologist*, 29:177, 1987.

Powis G, **Oakes SG** and Santone KS: "Inhibition of the plasma membrane calcium action potential in differentiated N1E-115 neuroblastoma cells by anticancer drugs". *EORTC*, 1987.

Oakes SG, Santone KS and Powis G: "Reversible inhibition of the calcium action potential (AP) in differentiated neuroblastoma cells by cis-platinum (II) diamminedichloride". *Proceedings of the Annual Meeting of the American Association for Cancer Research*, 27:266, 1986.

Oakes SG and Powis G: "Loading and metabolism of the calcium indicator fura-2 AM in rat hepatocytes and murine neuroblastoma cells". *Pharmacologist* 28:222, 1986.

Santone KS, **Oakes SG**, Taylor SR and Powis G: "Doxorubicin (DOX)-induced electrophysiologic changes in differentiated neuroblastoma cells". *Proceedings of the Annual Meeting of the American Association for Cancer Research*, 26:9, 1985.

Oakes SG, Santone KS, Taylor SR and Powis G: "Cancer chemotherapeutic agents reversibly reduce the calcium action potential (AP) in differentiated neuroblastoma cells". *Pharmacologist*, 27:149, 1985.

Oakes SG, Taylor SR and Richelson E: "Demonstration of a histamine (H1) receptor-mediated cyclic GMP-related hyperpolarization of the membrane of murine neuroblastoma". *Federation Proceedings Abstracts*, 42:906, 1983.

Lima P, **Oakes SG**, Henke S and Pozos RS: "Electrophysiologic effects of herpes simplex virus type 2 on dorsal root ganglia neurons *in vitro*". *Journal of Neuropathology and Experimental Neurology*, 40:355, 1981.

Lima P, **Oakes SG**, Pozos RS and Ziegler RJ: "Comparative Electrophysiologic effects of HSV-1 and HSV-2 on sensory neurons *in vitro*". *International Workshop on Herpes Viruses*, 1981.

Oakes SG and Pozos RS: "Caffeine antagonizes the adenosine-caused decrease in the calcium component of action potentials from rat sensory neurons in culture". *Society for Neuroscience Abstracts*, 8:799, 1981.

Pozos RS, Ziegler RJ and **Oakes SG**: "Alterations of the evoked action potential from dorsal root ganglia neurons infected with herpes virus". International Conference on Human Herpes Virus, 1:16, 1980.

Oakes SG and Pozos RS: "Alcohol decreases the calcium component of sensory neuron action potentials in culture". Society of Neuroscience Abstracts, 6:609, 1980.

Oakes SG and Pozos RS: "Electrophysiologic effects of ethanol on dissociated sensory ganglia *in vitro*", Alcoholism: Clinical and Experimental Research, 4:225, 1980.

Oakes SG and Pozos RS: "Direct ethanol effects on the calcium component of rat dorsal root ganglia neurons in culture". Pharmacologist, 22:280, 1980.

Oakes SG, Ziegler RJ and Pozos RS: "Studies of the sodium and calcium components of evoked action potentials for cultured rat dorsal root ganglia neurons infected with herpes simplex virus". Society for Neuroscience Abstracts, 5:516, 1979.

Gitelson H, Pozos RS, Ziegler RJ, Lima P, Moore J and **Oakes SG**: "Electrophysiologic observations of cultured dorsal root ganglia cells infected with herpes simplex virus". Society for Neuroscience Abstracts, 4:396, 1978.

Grants and Training

"Teaching to Engage a New Generation of Learners in Nonprescription Medications" SG Oakes, Co-selection, UW-Teaching Academy Summer Institute, 2013, to cover expenses.

"Utilizing the CSCR Builder to Create a Virtual Nonprescription Consultation with Older Adults" SG Oakes, Co-investigator, University of Wisconsin Engage Situated Learning Award, 2012-2013, \$1000.

"Innovations for Nonprescription Medications Course" S.G. Oakes, Co-investigator, University of Wisconsin SOP Teaching Innovation Award, 2012-2013, \$5000.

"Online Distance Learning Extension Course in Basic Pharmacology." SG Oakes, Co-investigator, University of Wisconsin SOP Teaching Innovation Award 2012-2013, \$7500.

"Designing Relevant Teaching UW -Teaching Academy in Nonprescription Medications" SG Oakes, Co-selection, UW-Teaching Academy Summer Institute, 2013, to cover expenses.

"Instrument Grant for an Universal Imaging Corporation Image 1/AT." SG Oakes, Co-investigator, Eastern Virginia Medical School Instrumentation Grant, 1990.\$19,300.

"Instrument Grant for Fluorescence Microscope and Photometric Attachments". SG Oakes, Co-investigator, Eastern Virginia Medical School Instrumentation Grant, 1989. \$13,837.

"Influence of K-ras transformation on hormone signaling in blab/C3T3 and NRK cells". SG Oakes, Co-investigator, Edmondson Cancer Grant, 02/01/90 to 01/31/91. \$10,000.

"Extranuclear sites of action of cancer chemotherapeutic agents". SG Oakes, Principal investigator, Edmondson Cancer Grant, 02/01/90 to 01/31/91. \$10,000.

"Interactions of calcium concentration, phosphoinositides and calcium channels". SG Oakes, Principal investigator, Eastern Virginia Medical School Institutional Grant. 04/01/89 to 03/30/90. \$9,984.

"Calcium ion concentration and currents in human cardiac myocytes-action of phosphoinositides and doxorubicin". SG Oakes, Principal investigator, American Heart Association-Virginia Affiliate. 07/01/89 to 06/30/91. \$49,990.

VI. COMMITTEE AND REVIEW ACTIVITIES

Equity, Diversity & Climate - Student Committee, University of Wisconsin-Madison, **Member**, 2015-2016

Third Annual WARF Discovery Challenge Research Symposium, University of Wisconsin-Madison, **Poster Judge**, 2014.

University of Wisconsin Institute for Clinical and Translational Research (ICTR) Clinical and Type 1 Research Pilot Awards Program, **Reviewer**, 2013.

Second Annual WARF Discovery Challenge Research Symposium, University of Wisconsin-Madison, **Poster Judge**, 2013.

Top 100 Self Care Drug Cards project (Jill Kolesar and Lee Vermeulen eds.) McGraw Hill Publishing, **Faculty Advisory Panel**, 2013

Coordinating Committee for Academic Programs (CCAP), University of Wisconsin-Madison, **Member**, 2012-2018

Pharmacology & Toxicology BS Degree Program, **Program Director**, University of Wisconsin-Madison, 2010-2018

PharmTox External Advisory Board, University of Wisconsin-Madison, **Chair**, 2010- 2018

Pharm/Tox Admissions and Oversight Committee, **Chair**, UW SOP, 2010-2018

Molecular and Environmental Toxicology Center, **Graduate Faculty Member**, University of Wisconsin-Madison, 2010-2018

Scholarship Committee, **Chair**, at UW SOP, 2008-2010

Assessment Committee at UW SOP, **Member**, 2007-2018

Curriculum Committee at UW SOP, **Member**, 2007-2008

Animal Care and Use Committee at UW SOP, **Member**, 2005-2007

Reviewer of grant submissions, Director, Augustine Medical, Inc., 1992-1994

Adjunct Reviewer to: 1986 - 1992
Journal of Biological Chemistry
American Journal of Physiology
Life Sciences

Brain Research

Representative to the Faculty Senate, EVMS, 1992

Honorary Degrees Committee EVMS, 1992

Institutional Biosafety Committee EVMS, 1991-1992

Reviewer of Institutional Grants at EVMS, 1989 – 1992

Committee for Minority/Rural Medical Educ. EVMS, 1989-1992