Eugene Applebaum College of Pharmacy and Health Sciences
Wayne State University

Department of Pharmaceutical Sciences
Annual Report
2013-2014

Report is for the year July 1, 2013 - June 30, 2014
(except where noted)
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Who We Are and What We Do: A Statistical Summary

Who We Are

Faculty: 45 (19 Full-Time, 22 Adjunct, 4 Emeritus).
Staff: 2
Graduate Students: 36 (17 Ph.D. Candidates including 2 MD/Ph.D. Candidate, 19 MS Candidates)
Postdoctoral Fellows: 17
Research Assistants / Associates / Scientists: 12
PharmD / SURF / Undergraduate / Intern / Volunteer / Other Researchers: 34

What We Do

Honors / Awards: 25 (19 National, 3 University, 3 College)
Professional / Scientific Leadership: 59 (15 External, 44 Internal)
Scientific Review Panels: 41 (19 NIH)
Editorial Boards: 35 (2 Editors, 2 Associates, 1 Senior, 1 Review, 1 Honorary, 28 Board Members)
Grants: 54 (26 Federal, 7 Foundation, 21 University/College)
Invited Presentations: 36
Publications: 184 (97 Papers, 12 Book Chapters, 5 Patents/Disclosures, 70 Abstracts)
Department Seminars: 20

The Year in Review

Faculty, Staff, and Researchers:

Full-time, emeritus, and adjunct faculty and staff members appear in the next section of this annual report. We congratulate Dr. Fei Chen who earned promotion to full Professor in 2014, and Dr. Zhengping Yi, who was reviewed for tenure and promotion in 2014 and has been recommended to the Provost for tenure and promotion to full Professor. Pharmaceutical Sciences enjoyed uncommon success in recruiting and hiring three outstanding new faculty members.

The faculty search committee that identified and assisted in recruiting Dr. Zhihui Qin was chaired by Dr. Aloke Dutta. Dr. Qin began his Wayne State career in September 2013 as tenure track Assistant Professor. He came to us from the University of Illinois - Chicago College of Pharmacy. He rose to the top of the candidate pool for many reasons, including his impressive research training most recently in laboratories co-led by Drs. Gregory Thatcher and Dr. Judy Bolton, two renowned pharmaceutical sciences researchers. He is Principal Investigator of a substantial Department of Defense grant that investigates prostate cancer and androgen receptor sensitivity, which he has transferred to the department. Dr. Qin applies novel medicinal chemistry concepts to develop new treatments for various cancers that also incorporate and capitalize on innovative drug biotransformation applications.

The faculty search committee that identified and assisted in recruiting Dr. Timothy Stemmler was chaired by Dr. Aloke Dutta. Dr. Timothy Stemmler accepted a position of tenured Professor of Pharmaceutical Sciences in September 2013, moving from the Department of Biochemistry and Wayne State School of Medicine with the full support
of school leadership. He transferred a large laboratory group and two major NIH grants. Dr. Stemmler studies the structure and function of metalloproteins at the molecular and atomic levels and how they relate to cardiovascular and neurodegenerative disorders. He is exploring how specific metalloproteins regulate cellular metal homeostasis pathways in disease and how they can be modified to restore health.

The faculty search committee that identified and assisted in recruiting Dr. Arun Iyer was chaired by Dr. Hanley Abramson. Dr. Iyer joined the department in January 2014 as a tenure track Assistant Professor. He served as Research Assistant Professor in the Northeastern University School of Pharmacy. Shortly after his arrival, Arun was co-awarded a substantial multi-PI R21 NIH grant with collaborators at Northeastern. His advanced skills in polymer synthesis, multifunctional nanoparticles, drug delivery systems, tumor targeting, and imaging are being directed at developing innovative treatments and diagnostics for patients with lung, pancreatic, prostate, and other cancers. Dr. Iyer filled an Enhancement faculty position awarded to the department in 2010. For the first time in decades, 100% of department faculty positions were filled.

The department currently has 15 faculty conducting bench research programs, which represents an increase over the 13 programs in 2012-13. The department is expected to see continued growth in the number of bench research programs, based on a number of retirements that are anticipated in coming years. With the three new faculty hires, the department reached a record number of 20 faculty in January 2014.

Pharmaceutical Sciences experienced a most significant milestone in May of 2014. Dr. Henry Wormser retired after serving for 49 years as a member and a leading force in our program. His extensive contributions were recognized through the new title of Emeritus Professor. Despite his official retirement, Dr. Wormser remains active in our program as he continues to teach PharmD and graduate students.

The Department is continuing a strong recovery from 100% turnover of its support staff in 2011-2012 as a result of budget cuts and position bumping. We have entered into a period of comparative stability in 2013-2014 and enjoy an experienced and accomplished office staff. Ms. Latoya Rice was recruited from an outstanding pool of applicants to fill our Administrative Assistant position, permanently replacing Ms. Tracey Kovach. She was an Administrative Assistant in the Department of Otolaryngology, Wayne State School of Medicine. The department enjoyed another important success in its recruitment of Ms. Rebecca Perez to serve as Secretary, replacing Ms. Candis Harris. Rebecca came to us from the Law School. We have also benefited from the increased support of excellent student assistants and work study students over the year, including Ms. Manzila Askar and Ms. Vibhuti Matta, who is also a MS candidate working in the laboratory of Dr. Pitts.

**Education Programs:**

Enrollment in the Pharmaceutical Sciences Ph.D. program decreased from 16 in Fall of 2012 and 16 in Fall of 2013 to 13 in Fall of 2014, due in part to decreased research
funding and a limit in laboratory capacity. The MS program enrollment which rose from 16 in Fall 2012 to 19 in Fall 2013, fell to 14 in Fall of 2014 as four students moved from the MS to the Ph.D. program. They include Ms. Yuran Xie, Mr. Nithin Boppana, Mr. Vaibhav Sidarala and Ms. Damacharla Divyasri. 2014 enrollment in the MS program appears to approximate a steady state level based on the current capacity of research laboratories. Because 9 Ph.D. candidates were admitted in 2013, about double the normal level, only one new Ph.D. Candidate was admitted in 2014, Ms. Brianne Lewis. One Ph.D. candidate, Mr. Mahmoud Farghali, left the program. The department is proud to host our first MD/Ph.D. candidates, Mr. Cale Streeter and Mr. Steven Dzul, joined us in Fall 2013 and both are progressing well.

From January 2013 through December 2014, Ph.D. degrees in Pharmaceutical Sciences were conferred upon Dr. Gyan Modi, Dr. Abiy Mohammed, Dr. Mrudang Shah, and Dr. Yu Zhu. Over the same time period, MS degrees in Pharmaceutical Sciences were conferred upon Ms. Lenah Amayreh, Ms. Maha Elsayed, Ms. Lakshmi Cheemalakonda, Mr. Fahd Dholtkawala, Ms. Poorva Divekar, Mr. Bryan Hannan, Ms. Zhiwen Shi, Mr. Zhao Yang, and Ms. Mingyang Zhao. Quadrupling the enrollment in our MS program in Fall of 2012 to 16 has necessitated that core courses be offered yearly rather than every other year.

We continue to encourage Pharmacy Practice faculty researchers to become Adjunct Professors in Pharmaceutical Sciences. This provides our MS candidates access to research programs in Pharmacy Practice for conducting their thesis research. Pharmacy Practice does not have a graduate program at this time so the adjunct appointment provides for the ability to train MS students. There are currently 3 PPR faculty with PSC Adjunct Faculty standing, Drs. Ashour, Kilgore and Rybak. The department reaches out to new Pharmacy Practice faculty members shortly after they are appointed.

Pharmaceutical Sciences has now completed the second year of a redesigned graduate curriculum. Students continue to enroll in required core courses of 3-credits each, and an Introduction to Research course that increased from one to two credit hours to accommodate enhanced Responsible Conduct of Research and statistics content. Restructuring across the curriculum has increased increased course rigor, which was requested by graduate students in a recent survey. It has also produced a small increase the number of dismissals. The Doctor of Pharmacy curriculum continued to evolve, including introduction of a new elective in Pharmacogenomics by Dr. Abramson and steps to separate Pharmacotherapeutic Problem Solving from the modules to form four separate two credit hour PPS courses.

Since 2002, the Department has sponsored a Summer Undergraduate Research Fellow (SURF) program for undergraduate students interested in exploring research careers in the Pharmaceutical Sciences. This paid summer internship program includes 6-10 undergraduate juniors and sophomores from Wayne State University and other nearby colleges and universities. Support for the SURF program stipends comes primarily from a Department Research Enhancement Award made in 2010, with additional support
from the research programs of SURF Mentors. The program provides the students with (1) an intensive experience in original hypothesis-driven research working alongside a faculty research mentor and (2) an overview/introduction to research as a career opportunity, provided by the SURF Program Coordinator and departmental faculty. Students entering with an interest in exploring careers in research learn about and experience many of the diverse activities that constitute life as a biomedical researcher. Student interviews show that the program clarifies what was otherwise a weak understanding of biomedical research as a career. Many SURF students go on to pursue research careers in the biomedical sciences. In 2013, we received 23 applications for the SURF program and eight students were selected to participate. In 2014, 21 applications were received and six students were selected to participate. SURF participants and their affiliations are listed in a later section.

The department obtained approval for new Director of Education position. The search committee is chaired by Dr. Hanley Abramson and includes Drs. Anna Moszczynska and Philip Pokorski. The search remains open. Responsibilities of the future Director include 1) overseeing planning for improving Ph.D., MS, SURF, Postdoctoral, PharmD/Ph.D., MD/Ph.D., and future curricula, 2) assisting in assessing effectiveness and outcomes of curricula, 3) advising on teaching workload, 5) coordinating faculty mentoring, and 6) serving as education liaison outside the department.

Assessment and Accreditation:

The department is involved in three very significant assessment and accreditation undertakings, while concurrently playing a major role in the renewal of a restructured Doctor of Pharmacy curriculum to be introduced in Fall of 2016. The year of 2013-2014 has included a wide variety of assessment and planning activities.

The first is the re-accreditation of the Doctor of Pharmacy program. Every Pharmaceutical Sciences faculty member has been actively involved in contributing to and advancing the collection of data and the preparation of the PharmD self study documents. They will be the primary information resource for site visit team members appointed by the Accreditation Council for Pharmacy Education to evaluate our Doctor of Pharmacy program. This has required substantial investment of time, effort and expertise on the part of Pharmaceutical Sciences and Pharmacy Practice faculties and particularly the pharmacy leadership.

The second is the Higher Learning Commission (HLC) university-wide accreditation of Wayne State University, which includes a first ever assessment of its graduate programs. The first milestone is submission of a subset of self study data by May of 2014. This represents the first accreditation assessment of the Pharmaceutical Sciences Ph.D. and MS programs in its history. The HLC evaluation includes development of mission and visions statements for the Ph.D. and MS programs, preparing curricular maps, developing program learning objectives, and submitting a broad range of assessment results for metrics that assess progress toward achieving our learning objectives. Some of the data are being collected ad part of the
Pharmaceutical Sciences strategic plan. However, much of the requested information and assessment data are being generated de novo.

A third significant concurrent evaluation involves a Pharmaceutical Sciences Academic Program Review (APR). This is part of a regular assessment program that Wayne State conducts for each academic unit every six years. This will be the first APR for the Department of Pharmaceutical Sciences in many years. Because an APR has not been conducted by WSU in the past, this has resulted in some challenges related to the absence of historical data sets. However, there are many positive outcomes including focusing our programs on forward looking assessment and planning. The APR requires preparation of an extensive self-study document that incorporates historical data sets and new assessment data, as well as plans for program development and long term goals. The WSU APR will begin with a site visit by external evaluators. Their assessment report will go to a larger team of internal WSU evaluators. Recommendations presented to the Provost will lead to an action plan that is reviewed annually to advance the department and its programs.

Efforts and resources of Pharmaceutical Sciences and Pharmacy Practice combined in 2014 to create a new position, Pharmacy Director of Assessment. Dr. Justine Gortney accepted this position and is leading the HLC and APR self study efforts, with substantial support from the Director of Graduate Studies Dr. Steven Firestine, the Director of Research Dr. Timothy Stemmler, APR self study coordinator Dr. Fusao Hirata, and many others.

**Professional Leadership:**

The contributions of Pharmaceutical Sciences faculty to professional leadership, particularly at the national and international levels, are outstanding. They have increased both in level of responsibility and in absolute number, and have more than doubled in number in the past decade. This includes Editors, two Associate Editors, one Senior Editor, one Honorary Editor, and 29 Editorial Board Members, 41 national review panels with 19 on NIH Study Sections, 36 invited presentations, and 68 positions of national and university leadership. Excellence in scholarship has been the primary factor driving this increase. The faculty members of this department have never been more visible on the national and international stage.

**Research and Scholarly Activities:** The Pharmaceutical Sciences research portfolio and its research operations remain a strength of the college. The funding tables detail an impressive number and scope of major federal, foundation, corporate, and university / college awards to department investigators. Members at every level within the department contribute to advancing the strategic research goals of pharmaceutical sciences. These goals are detailed in the Pharmaceutical Sciences Strategic Plan 2012-2016. The broader commitment of the pharmacy program to excellence in scholarship has been affirmed in the Pharmacy Strategic Plan which was completed last year. The vision driving our scholarly strategies is to achieve national recognition as a
top ranked program in the pharmaceutical sciences has taken major steps forward over the past decade.

Despite the diligence and excellence of department researchers, the very challenging NIH funding climate has resulted in significant fluctuation in university, college and Pharmaceutical Sciences research support across FY 2012 to FY 2014. NIH funding for the Wayne State University School of Medicine, a barometer of university-wide biomedical research funding, showed a large decline in FY 2013 funding related in large measure to the end of federal supplemental ARRA funding for biomedical research. Similar trends occurred across the country. NIH funding in FY 2013 ($37.8M) fell 27.0% versus FY 2012 ($51.8M), but rebounded 13.2% in FY 2014 ($42.5M) versus FY 2013. The College experienced a smaller decline in research support. Funding in FY 2013 ($4,779,466) fell 3.8% versus FY 2012 ($4,915,467), yet funding in FY 2014 ($4,183,946) fell a further 12.5% versus FY 2013. Pharmaceutical Sciences research funding in FY 2013 ($2,169,015) fell 40% versus FY 2012 ($3,603,625), yet rebounded 12.7% in FY 2014 ($2,770,868) versus FY 2013. The funding tables that follow illustrate that most grant funding to the college comes from highly competitive NIH investigator-initiated R01 awards to pharmaceutical sciences faculty.

In 2013, Pharmacy ranked in the top 20 out of 133 pharmacy programs for the number of NIH R01 grants. Our NIH awards are complemented by funding from the Veterans Administration, corporations, and competitive internal research programs supported by Wayne State. A top goal of the department and college is to establish one or more multidisciplinary, multi-investigator grants. Areas that are existing strengths that are poised for national competitiveness include diabetes / obesity / metabolic syndrome, oxidative stress and disease, neurosciences, cancer, infection, and drug discovery and design. The pharmacy program has taken several steps to advance the goal of obtaining multidisciplinary, multi-investigator grants.

Associate Dean for External Scientific Affairs, Dr. Anjan Kowluru, Associate Dean for Research Dr. Deepak Bhalla, and Associate Dean for Pharmacy, Professor Richard Slaughter worked together to create the first External Science Advisory Board for the college. The Board is chaired by Dr. Gloria Heppner of the WSU OVPR, co-chaired by Dr. Jordan Cohen of the University of Iowa, and includes Dr. Gene Morse of the University of Buffalo, Dr. Stephen Munk of Ash Stevens, Dr. Jerry Nadler of Eastern Virginia Medical School, Dr. Subhash Padhye of the University of Pune, Dr. Bonita Stanton of the WSU School of Medicine, and Dr. Walter Straus of Merck and Co. The Board met in April 2014 to assess Pharmacy research strengths and provided a report with recommendations for advancing the research enterprise and making progress toward successful multidisciplinary, multi-investigator research awards.

Dr. Corcoran organized a meeting with the Office for the Vice President of Research (OVPR), including Drs. Lanier, Heppner and Dunbar, to present a synopsis of pharmacy research strengths and to explore how pharmacy can contribute to the future WSU research vision developed in part based on recommendations of the external consultant
The department created a Director of Research position and recruited Dr. Timothy Stemmler to accept this responsibility. The search committee was chaired by Dr. Anjan Kowluru and included Dr. Separovic and Dr. Kilgore, the Director of Research for Pharmacy Practice. Dr. Stemmler became Director in February 2014. His duties include 1) facilitating efforts to establish and foster multi-investigator research programs and, 2) overseeing department research infrastructure to ensure its high quality and effectiveness in promoting productive and nationally competitive programs.

Scholarly publication stands as a strength of the department. The number of papers published by faculty since 2010 has averaged from 2.0 to 3.4 per year. To place this in perspective, our faculty publish at a rate that equals or exceeds schools that rank 15-20 positions above our program and qualify as aspirational institutions for strategic planning purposes.

Awards and Recognitions:

The many awards and honors accorded to Pharmaceutical Sciences members are listed in a later section of this report. This section expands on Department and College awards.

The 2014 George C. Fuller Endowed Scholarship recipient was Mr. Kai Wu (Ph.D. Candidate), and the 2014 Frank O. Taylor Scholarship recipients were Mr. Bryan Killinger (Ph.D. Candidate) and Ms. Heli Chauhan (MS Candidate). They were recognized at the College Donors and Scholars Award Luncheon on May 15th as well as at the June Pharmaceutical Sciences faculty meeting. Each received an inscribed commemorative plaque and a cash award in the amount of $1,500.

Mr. Kai Wu is a Ph.D. Candidate in the laboratory of Dr. Fei Chen, where he is working to understand the mechanisms of chemoresistance of lung cancer, with an emphasis on how EGFR TKI-based therapy activates intracellular signaling pathways that are important for the generation of cancer stem cells. Mr. Bryan Killinger is a Ph.D. Candidate in the laboratory of Dr. Anna Moszczynska, where he is working to establish the role of parkin in regulation of axonal transport of dopamine transporters in methamphetamine-exposed nigrostriatal dopamine pathway under conditions of acute binge administration and self-administration. Ms. Heli Chauhan is a MS Candidate in the laboratory of Dr. Anna Moszczynska, where she is working to determine whether methamphetamine-mediated decreases in the levels of parkin, a neuroprotective E3 ligase, results in neurotoxicity-promoting impairment of vesicular monoamine transporter 2 (VMAT2) trafficking.

The College Research Forum in 2013 was more successful than any previous year. Pharmaceutical sciences researchers accounted for nearly 30% of the record 78 poster
presentations. Mr. Nithin Boppana received the graduate student Research Forum Award for Best Basic Sciences poster.

Facilities and Equipment:

Our comparatively new laboratory and department space continue to impress researchers who visit from top national and international research programs. The Proteomics Research Laboratory created in 2011 and directed by Dr. Zhengping Yi continues to provide state-of-the-art research capabilities for advancing research projects in diabetes, oxidative stress signaling, and cancer. The LC-MS-MS Pharmacy Analytical Core is supporting the anti-infective research of Drs. Reineke and Rybak and remains available for users across the medical campus. The NMR core has undergone substantial change with retirement of a 400 MHZ Agilent Mercury magnet. The 600 MHZ Inova NMR which is in the same room as the retired mercury magnet and previously utilized by the School of Medicine, is under evaluation for transfer to the Pharmaceutical Sciences to meet department NMR needs.

Two major enhancements are underway to protect the research enterprise. A backup generator was approved and will be installed on the west side of our building. This will protect our research enterprise from extended periods of lost power. At the level of mission critical laboratory instruments, the college approved installation of uninterrupted power supply (UPS) equipment on each floor with research laboratories or cores. Pharmaceutical Sciences room 3501, a former laboratory storage room, will be renovated and dedicated to housing UPS equipment.

Department and College Policies and Structures:

A Pharmaceutical Sciences Space Committee was developed in 2013 and the committee charge was approved by faculty in January 2014. The committee is chaired by Dr. Aloke Dutta, and includes Drs. Stemmler, Hirata, and Reineke, and College Operations Director Ms. Wright. The committee is charged with overseeing 1) ownership and stewardship of space, 2) criteria for space assignment, 3) space changes, 4) lab space reassignment, 5) emeritus and adjunct faculty space, and 6) storage space. Our policy was adapted from the College of Science and Mathematics, Kennesaw State University policy with attribution.

In 2013 and 2014, the Graduate Program Committee recommended new policies that graduate students who wish to work outside the department while at the same time receiving department support must receive committee approval, and that graduate students must successfully complete all core courses before defending a thesis or dissertation. Additional policies are being developed to define deadlines for forming thesis and dissertation committees, for completing written qualifying examinations, for completing the prospectus and oral qualifying examinations, and for expectations for transferring from the MS to the Ph.D. program.
The College has suffered recurring general fund budget cuts over most of the last 15 years and underwent another cut to its general fund budget, as did all other units in the university. The cuts to the college occurred despite a 5 year trend of increased enrollment, external funding and development. The FY’15 budget impacted 2014 with a significant decrease in general funds to pharmaceutical sciences and elimination of the faculty line vacated by Dr. Wormser on his retirement. This decreasing our faculty number from 20 to 19 in May 2014. In the FY’14 budget cut, Pharmaceutical Sciences lost four GRE positions ($170,000) from its Graduate Enhancement Award positions. The ‘FY16 budget cut has not been finalized but is expected to be between 1-3% of the $2.3M department budget. The department Research Enhancement Plan adopted in 2012 continues to designate 10% of PSC PI salaries on external grants to support departmental Graduate Research Assistants. This has offset loss of GRA lines in 2013-2014 and has helped to keep the department research programs progressing toward our vision and mission. Due to recurring cuts in our general fund budget, the department instituted a policy in 2013 that captures all salary savings on external awards to support the graduate program. This policy is expected to continue in 2015-16.

University Leadership, Policies and Structures:

There were extensive changes in the highest levels of Wayne State leadership in 2013-2014. President Dr. Alan Gilmore retired and Provost Dr. Ronald Brown resigned. New President Dr. M. Roy Wilson, new Provost Dr. Margaret Winters, and new Associate Provost Dr. John Vander Weg took office in Fall 2013. Vice President for Research Dr. Hilary Ratner retired in Winter 2014. This position which is very important to for research activities in the department, was filled by Dr. Steven Lanier from the Medical University of South Carolina. A new Interim Dean of the Graduate School, Dr. Ambika Mathur, was appointed in February 2014.

Perhaps most germane to this department, the Provost announced that Dean of Pharmacy and Health Sciences Dr. Lloyd Young would take temporary leave from the college from April through August 2014 and that Dr. Catherine Lysack, Professor in the College Occupational Therapy program and Deputy Director for the Institute of Gerontology was appointed as Acting Dean. Many Deans and other high level positions across the university also saw departures and new appointments in 2013-2014. The university continues to introduce new systems to modernize and streamline support services including WaynePM for human resources, and is planning a system-wide upgrade of its email and communication suite in mid-2015.

Department Faculty and Staff

Faculty

- Hanley N. Abramson, Ph.D., Professor
- Deepak K. Bhalla, Ph.D., Professor and Associate Dean of Research
- Fei Chen, Ph.D., Professor
Adjunct Faculty

-Jacob V. Aranda, Adjunct Professor, SUNY Downstate, New York
-Hossam Ashour, Adjunct Assistant Professor, Pharmacy Practice
-Amit Banerjee, Assistant Professor
-David J.P. Bassett, Adjunct Professor, Family Medicine
-Michael R. Bleavins, Adjunct Associate Professor, Michigan Technology & Research Institute
-Merlin E. Ekstrom, Adjunct Associate Professor, WSU
-Peter D. Frade, Associate Professor, Fundamental and Applied Sciences
-Bradford R. Hepler, Adjunct Assistant Professor, Wayne County Office of Medical Examiner
-Daniel Isenschmid, Adjunct Assistant Professor, Wayne County Office of Medical Examiner
-Edward Kerfoot, Adjunct Professor, Occupational and Environmental Health Sciences
-Paul Kilgore, Adjunct Professor, Pharmacy Practice
-Ladislau C. Kovari, Adjunct Associate Professor, Biochemistry
-Robert E. Levine, Adjunct Professor, Wellness and High-Performance Strategies
-Jing Li, Adjunct Assistant Professor, Karmanos Cancer Institute
-Emily T. Martin, Adjunct Assistant Professor, Pharmacy Practice
-Howard J. Normile, Adjunct Associate Professor, Health Care Sciences
-Allen J. Rosenspire, Adjunct Associate Professor, Microbiology and Immunology
-Michael J. Rybak, Adjunct Professor, Pharmacy Practice
-Paul M. Stemmer, Associate Professor, Institute of Environmental Health Sciences
-Bonita G. Taffe, Adjunct Assistant Professor, State of Michigan Bureau of Laboratories
-William D. Watt, Adjunct Professor, Occupational and Environmental Health Sciences
-Hani Zaher, Adjunct Assistant Professor, Zaher Pharmaceutical Consulting

Emeritus Faculty

-Martin Barr, Emeritus Dean and Professor
-Raymond J. Dauphinais, Emeritus Professor
-Janardan B. Nagwekar, Emeritus Professor
-Henry Wormser, Ph.D., Emeritus Professor (Awarded June 2014)

Visiting Faculty
-Gert Fricker, University of Heidelberg, Institute of Pharmacy and Molecular Biotechnology

**Staff**

- Candis Harris, Secretary (Separated 02/14/2014)
- Rebecca Perez, Secretary (Started 04/14/2014)
- Latoya Rice, Administrative Assistant

**Research Personnel in Training**

**Pharmaceutical Sciences Ph.D. Candidates**

- Avinash Ande, Graduate Research Assistant, Advisor Joshua Reineke, Ph.D.
- Nithin Boppana, Graduate Research Assistant, Advisor Duska Separovic, Ph.D.
- Asma Elmabruk, Ph.D. Candidate - Advisor Alok Dutta, Ph.D.
- Syeda Khadija, Graduate Research Assistant, Advisor Anjan Kowluru, Ph.D.
- Bryan Killinger, Graduate Research Assistant, Advisor Anna Moszczynska, Ph.D.
- Brianne Lewis, Graduate Research Assistant, Advisor Timothy Stemmler, Ph.D.
- Lingzi Li, Graduate Research Assistant, Advisor Fei Chen, Ph.D.
- Yi Liao, Graduate Research Assistant, Advisor Zhihui Qin, Ph.D.
- Qian Lin, Graduate Research Assistant, Advisor Steven Firestone, Ph.D.
- Dan Luo, Graduate Research Assistant, Advisor Alok Dutta, Ph.D.
- Gyan Modi, Graduate Research Assistant, Advisor Alok Dutta, Ph.D. (Defended Dissertation, 2013)
- Abiy Mussa Mohammed, Graduate Research Assistant. Advisor Anjan Kowluru, Ph.D. (Defended Dissertation, 2013, new Postdoctoral Fellow with Dr. Anjan Kowluru)
- Yue Qi, Graduate Research Assistant, Advisor Zhengping Yi, Ph.D.
- Mrudang Kumar Shah, Graduate Research Assistant, Advisor Alok Dutta, Ph.D. (Defended Dissertation, 2013)
- Vaibhav Sidarala, Graduate Research Assistant, Advisor Anjan Kowluru, Ph.D.
- Kai Wu, Graduate Research Assistant, Advisor Fei Chen, Ph.D.
- Yuran Xie, Graduate Research Assistant, Advisor David Oupicky, Ph.D. (Defended Dissertation, 2014)
- Yu Zhu, Graduate Research Assistant, Advisor David Oupicky, Ph.D. (Defended Dissertation, 2014)

**Ph.D. Candidates Training with Pharmaceutical Sciences Faculty**

- Dulmini Barupala, NIH Pre-Doctorial Fellow in the Department of Biochemistry, Advisor, Timothy L Stemmler, Ph.D.
- Daniel Feldmann, Graduate Research Assistant in Cancer Biology, Advisor Olivia Merkel, Ph.D.
- Steven Jones, Graduate Research Assistant in Cancer Biology, Advisor Olivia Merkel, Ph.D.
- April Kusowski, Graduate Research Assistant in the Department of Biochemistry, Advisor, Timothy L Stemmler, Ph.D.
- Andria Rodrigues, American Heart Association Pre-Doctorial Fellow in the Department of Biochemistry, Advisor Timothy L Stemmler, Ph.D. (Defended Dissertation 2014)
- Poorna Subramanian, Graduate Research Assistant in the Department of Biochemistry, Advisor Timothy L Stemmler, Ph.D. (Defended Dissertation 2013)

**MD / Ph.D. Candidates**

- Stephen Dzul, NIH Pre-Doctorial Fellow in the Department of Biochemistry, Advisor, Timothy L.
Pharmaceutical Sciences Master of Science Candidates

- Majed Alharbi, Advisor Zhengping Yi, Ph.D.
- Pansy Awasthy, Advisor Emily Martin, Ph.D.
- Heli Chauhan, Advisor Anna Moszczynska, Ph.D.
- Lakshmi Cheemalakonda, Advisor Joshua Reineke, Ph.D. (Degree Awarded 2014)
- Divyasri Damacharla, Advisor Zhengping Yi, Ph.D.
- Fahd Dholkawala, Advisor Aloke Dutta, Ph.D. (Degree Awarded 2014)
- Poorva Divekar, Advisor Emily Martin, Ph.D. (Degree Awarded 2014)
- Maha Elsayed, Advisor Olivia Merkel, Ph.D. (Degree Awarded 2013)
- Bryan Hannan, Advisor David Pitts, Ph.D. (Degree Awarded 2014)
- Vibhuti Matta, Advisor David Pitts, Ph.D.
- Animesh Raut, Advisor Michael Rybak, Ph.D.
- Nishit Shah, Advisor Zhengping Yi, Ph.D.
- Zhiwen Shi, Advisor Steven Firestine, Ph.D. (Degree Awarded 2014)
- Akhil Sharma, Advisor Anna Moszczynska, Ph.D.
- Zhao Yang, Advisor Zhengping Yi, Ph.D. (Degree Awarded 2014)
- Mingyang Zhao, Advisor Steven Firestine, Ph.D.

M.S. Candidates Training with Pharmaceutical Sciences Faculty

- Nicholas Spellmon, Department of Biochemistry, Advisor Timothy Stemmler, Ph.D. (Degree Awarded, 2014)

Postdoctoral Fellows

- Daleep K. Arora, Ph.D., Postdoctoral Fellow, Advisor Anjan Kowluru, Ph.D. (Separated October, 2013)
- Michael A. Caruso, Ph.D., Postdoctoral Fellow, Advisor Zhengping Yi, Ph.D.
- Bailing Chen, Ph.D., Postdoctoral Fellow, and Advisor Zhihui Qin, Ph.D.
- Banibrata Das, Ph.D., Postdoctoral Fellow, Advisor Aloke Dutta, Ph.D.
- Amanda Flack, Ph.D, Postdoctoral Fellow, Advisor Anna Moszczynska, Ph.D.
- Qiang Fu, Ph.D., Postdoctoral Fellow, Advisor Joshua Reineke, Ph.D.
- Jickssa Gemechu, Ph.D, Postdoctoral Fellow, Advisor Anna Moszczynska, Ph.D.
- Thippeswamy Gulappa, Ph.D. Postdoctoral Fellow, Advisor Anjan Kowluru, Ph.D. (Separated August, 2013)
- Monique K. Lewis, Ph.D., Postdoctoral Fellow, Advisor Zhengping Yi, Ph.D. (Separated June, 2014)
- Danjun Ma, Ph.D., Postdoctoral Fellow, Advisor, Zhengping Yi, Ph.D.
- Sara Movassaghiyan, Ph.D, Postdoctoral Fellow, Advisor, Olivia Merkel, Ph.D.
- Venkatareddy Nadithre, Ph.D., Postdoctoral Fellow, Advisor Olivia Mekel, Ph.D. (Separated July, 2014)
- Soumava Santra, Ph.D., Postdoctoral Fellow, Advisor Aloke Dutta, Ph.D. (Separated October, 2013)
- Horrick Sharma, Ph.D., Postdoctoral Fellow, Advisor, Aloke Dutta, Ph.D.
- Chitra Thakur, Ph.D., Postdoctoral Fellow, Advisor Fei Chen, Ph.D.
- Seenuvasan Vedachalam, Ph.D., Postdoctoral Fellow, Advisor Aloke Dutta, Ph.D.
- Chandra Shekhar Voshavar, Ph.D., Postdoctoral Fellow, Advisor Dutta, Ph.D.

Research Assistants / Associates / Scientists
-Wissam Anteer, Research Assistant, Supervisor Zhengping Yi, Ph.D. (Separated April, 2014)
-Paul Breen, Research Assistant, Supervisor Duska Separovic, Ph.D. (Separated July, 2013)
-John Boyd, Research Assistant, Supervisor Duska Separovic, Ph.D.
-Qingshan Chang, Ph.D., Research Associate, Supervisor Fei Chen, Ph.D. (Separated February, 2014)
-Ashoka Kandegedara, Research Assistant, Supervisor Timothy Stemmler, Ph.D.
-Yongju Lu, Research Assistant, Supervisor Zhengping Yi, Ph.D.
-Ping Qiu Ph.D., Research Scientist, Supervisor Anna Moszczynska, Ph.D.
-Shiv Sharma, Ph.D. Research Scientist, Supervisor Steve Firestine, Ph.D.
-Jiaying Sun, Research Assistant, Supervisor Fei Chen, Ph.D. (Separated February, 2014)
-Lindsey Nico Thompson, Laboratory Director, Supervisor Timothy Stemmler, Ph.D.
-Liping Xu, Research Assistant, Supervisor Alok Dutta, Ph.D.
-Xiangmin Zhang, Ph.D., Research Scientist, Supervisor Zhengping Yi, Ph.D.

PharmD / SURF / Undergraduate / Intern / Volunteer / Other Researchers

-Luke Antonczak, Student Assistant – Dr. Timothy Stemmler
-Rodney Berry, Student Assistant - Advisor Dr. Zhengping Yi
-Samantha Boyle (Michigan State University), SURF 2013 - Dr. Fei Chen
-Josephine Cheng, Student Assistant and Former SURF – Dr. Joshua Reineke
-Jessica Chyz, PharmD student - Advisor Dr. Anna Moszczynska
-Vincent Corrand, Intern – Advisor Dr. Olivia Merkel
-Ahmed El Mahmoudi, Intern – Advisor Dr. Olivia Merkel
-Kathrin Gasteyer, Intern – Advisor Dr. Olivia Merkel
-Eric Desjarais (Michigan State University), SURF 2013 - Dr. Joshua Reineke
-Claudia Hildebrandt, Intern – Advisor Dr. Olivia Merkel
-Rima Kandil, Intern – Advisor Dr. Olivia Merkel
-Rani Kattola (Wayne State University), SURF 2013 - Dr. Zhengping Yi
-Nicholas Kolderman, Student Assistant – Dr. Olivia Merkel
-Teresa Kraus, Intern – Advisor Dr. Olivia Merkel
-Jacob Lenning (Kalamazoo College), SURF 2014 – Dr. Zhihu Qin
-Brianne Lewis, Student Assistant - Dr. Timothy Stemmler, Ph.D.
-Vincent Lizzio, Student Assistant – Dr. Olivia Merkel
-Vibhuti Matta, Student Assistant – Ms. Latoya Rice
-Charles Marusak (Michigan State University), SURF 2013 - Dr. Anna Moszczynska
-Ishan Mehta (California Institute of Technology), SURF 2014 – Dr. Joshua Reineke
-Mariam Mohammadi, Intern – Advisor Dr. Olivia Merkel
-Jessica Mudge (Michigan State University), SURF2014 – Dr. Anna Moszczynska
-Theresa Palumbo (Wayne State University), SURF 2013 - Dr. Randall Commissaris
-Theresa Palumbo, Student Assistant and former SURF – Dr. Randall Commissaris
-Jessica Patel, PharmD student – Advisor Dr. Anna Moszczynska
-Roxana Piotrowska, Intern - Advisor Dr. Joshua Reineke
-Alyssa Provagna, Student Assistant – Dr. Timothy Stemmler
-Katherine VanDenburgh (Hope College), SURF 2013 - Drs. Olivia Merkel and Steve Firestine
-Gordon Rumschlag (Alma College), SURF 2013 - Dr. Randall Commissaris
-Akhil Sharma, Student Assistant – Advisor Dr. Anna Moszczynska
-Timothy Shea (Michigan State University), SURF 2014 – Dr. Olivia Merkel and Dr. Steven Firestine
-Brenda Sittto, Student Assistant – Dr. Zhengping Yi
-Jameson Tockstein, Student Assistant – Dr. Olivia Merkel
-Sarah Trumbore (Michigan State University), SURF 2014 – Dr. Fei Chen
-Sylvia Waldron, PharmD student - Advisor Dr. Anna Moszczynska
Graduate Degrees Conferred  (January 1, 2013 - December 31, 2014)

Lenah Amayreh, MS, 2013
Dissertation: Shell-Cleavable PLGA-Curcumin Micelles For Intracellular Delivery
Advisor: Dr. Joshua Reineke
Current position: Researcher at University of California, San Diego

Maha Elsayed, MS, 2013
Dissertation: Oligospermines For Non-Viral Sirna Delivery
Advisor: Dr. Olivia Merkel
Current position: Ph.D. Candidate, University of Minnesota

Gyan Modi, Ph.D., 2013
Dissertation: Design, Synthesis, Biological Evaluation And Molecular Modeling Studies Of Novel Multifunctional Neuroprotective Drugs For The Treatment Of Parkinson's Disease: An Effort Towards The Improvement Of In Vivo Efficacy And Modulation Of Alpha Synuclein Aggregation Property Of The Neuroprotective Parent Molecule (D-264)
Advisor: Dr. Aloke Dutta
Current Position: Postdoctoral Fellow, Brandies University

Abiy Mohammed, Ph.D., 2013
Dissertation: Mechanisms Of Cytokine-Induced Metabolic Dysfunction Of The Pancreatic Beta-Cell
Advisor: Dr. Anjan Kowluru
Current Position: Postdoctoral Michigan State University

Mrudang Shah, Ph.D., 2013
Dissertation: Progress Towards Understanding Of Mechanisms Of Action Of Potent Multifunctional Disease Modifying Therapeutics For Parkinson's Disease & Investigating The Methamphetamine-Induced Striatal Microglia Activation
Advisor: Dr. Aloke Dutta
Current Position: Associate Bioprocess Development Engineer, Keck Graduate Institute

Poorna Subramanian, Ph.D. in Biochemistry, 2013
Dissertation: Elucidation Of The Functional Role Of Pcbp - The Cytosolic Iron Chaperone Protein Family, In Cellular Iron Homeostasis
Advisor: Dr. Timothy Stemmler
Current Position: Postdoctoral Fellow, California Institute of Technology

Lakshmi Cheemalakonda, MS, 2014
Dissertation: Development And Evaluation Of PLGA-S-S-PEG Micelles Co-Encapsulating Curcumin Difluorinated And Paclitaxel For Synergistic Therapeutic Efficacy
Advisor: Joshua Reineke
Current Position: Seeking Research or Education Position

Fahd Dholkawala, MS, 2014
Dissertation: Synthesis And Characterization Of Brain Penetrant Prodrug Of Neuroprotective D-264: Potential Disease Modifying Treatment Agent For Parkinson's Disease
Advisor: Dr. Aloke Dutta
Current Position: Seeking Research or Education Position

Poorva Divekar, MS, 2014
Dissertation: Comparative Study Of The Prevalence Of Psk41 In Heterogenous Vancomycin-
Advisor: Dr. Emily Martin
Current Position: Seeking Research or Education Position

Bryan Hannan, MS, 2014
Dissertation: Species-Dependent Cardiac And Motor Responses To Cholinergic Stimulation In Daphinia Pulex And Daphinia Magna
Advisor: Dr. David Pitts
Current Position: Seeking Research or Education Position while Manager at Planet Fitness

Andria Rodrigues, Ph.D. in Biochemistry, 2014
Dissertation: Characterization Of The Initial Fe Binding Location And The Structure/Iron Binding Site On S. Cerevisiae Isu And On D Melanogaster Frataxin
Advisor: Dr. Timothy Stemmler
Current Position: Postdoctoral Fellow, University of Nebraska

Zhiwen Shi, MS, 2014
Dissertation: Site-Directed Mutagenesis Of Conserved Amino Acid Residues In N5- Carboxyaminoimidazole Ribonucleotide Mutase: Converting N5-CAIR Mutase Into Aminoimidazole Ribonucleotide Carboxylase & Developing A High-Throughput Screening Assay For The Discovery Of N5-CAIR Mutase Inhibitors
Advisor: Dr. Steven Firestine
Current Position: Ph.D. Candidate, Worcester Polytechnical Institute

Nicholas Spellmon, MS in Biochemistry, 2014
Dissertation: Expression And Purification Of The Drosophila Melanogaster Nfs1-Isd11 Complex
Advisor: Dr. Timothy Stemmler
Current Position: Ph.D. Candidate, Wayne State University

Zhao Yang, MS, 2014
Dissertation: Proteomic Discovery Of Protein Phosphatase 1 Catalytic Subunit Protein Interaction Partners In Human Skeletal Muscle
Advisor: Dr. Zhengping Yi
Current Position: Ph.D. Candidate, Wayne State University School of medicine

Mingyang Zhao, MS, 2014
Dissertation: Functional Studies Of 5-Carboxyaminoimidazole Ribonucleotide Synthetase And Mutase From Thermotoga Maritima
Advisor: Dr. Steven Firestine
Current Position: Ph.D. Candidate, University of Rhode Island

Yu Zhu, Ph.D., 2014
Dissertation: Dual Delivery Systems Based On Polyamine Analog Benspm As Prodrug And Gene Delivery Vectors
Advisor: Dr. David Oupicky
Current Position: Clinical Scientist and General Supervisor, Complete Toxicology Laboratories, Southfield, MI

Honors and Awards

National / International
- Aloke Dutta Nominated for AAPS Drug Discovery and Development Interface (DDDI) Award
- Aloke Dutta post-doctoral fellow Banibrata Das travel award to present poster, Parkinson’s Action Network (PAN) Forum, Washington, DC

- Anjan Kowluru Adjunct Professor, Faculty of Health Sciences, School of Biomedical Sciences at Curtin University, Perth, Western Australia
- Anjan Kowluru Excellence in Healthcare Leadership Award from Curtin University, Perth, Australia
- Anjan Kowluru Adjunct Professor, Interdisciplinary Science and Technology Research Academy, University of Pune, Pune, India
- Anjan Kowluru VA Biomedical R&D Central Office - Notable Biomedical Research Investigator
- Olivia Merkel Cancer Biology Graduate Student Daniel Feldmann awarded NIH BEST Fellowship
- Olivia Merkel Intern Claudia Hildebrandt received the PROSA fellowship, awarded by the Ludwig-Maximilians-Universitat Munchen, Germany, for an internship abroad
- Olivia Merkel Graduate Student Steven Jones was nominated for invited abstract submission to the 2014 Graduate Exhibition
- Olivia Merkel Graduate Student Steven Jones received Travel Grant for 10th International Symposium on Polymer Therapeutics, Valencia
- Olivia Merkel Graduate Student Steven Jones received NIH T32 Fellowship
- Olivia Merkel Students Nicholas Kolderman and Jameson Tockstine were awarded the Barber Foundation Fellowship
- Olivia Merkel MD Student Vincent Lizzio was awarded the Medical Student Summer Research Fellowship
- Olivia Merkel received a Travel Grant German Scholars Organization e.V.
- Olivia Merkel received the Dr. Jack Ryan Award endowed by the Dr. Morris S. Brent Fund
- Olivia Merkel was a selected Host for the first North American Galenus Guest professorship
- Olivia Merkel Postdoctoral Fellow Sara Movassaghian was awarded the Angelika Burger Fellowship
- Anna Moszczynska two graduate students received Frank O. Taylor Scholarship
- Anna Moszczynska two graduate students received travel award to attend Society for Neuroscience meeting
- Anna Moszczynska graduate student received Thomas C. Rumble Graduate Fellowship

University

- Arun Iyer Affiliate Member of Molecular Therapeutics Program, Karmanos Cancer Institute, Wayne State University, Detroit, MI.
- Anjan Kowluru member, WSU Academy of Scholars Junior Faculty Award Selection Committee
- Anna Moszczynska University Research Grant

College

- Randall Commissaris Teacher of the Year award, WSU College of Pharmacy Class of 2014
- Anna Moszczynska FRAP Young Investigator Award
- Philip Pokorski Lecturer of the Year, Wayne State University, Physician Assistant Program

Professional, Scientific and Other Leadership

External to University

- Deepak Bhalla served as a member, National Research Council Committee on Toxicology
- Deepak Bhalla served as a member, National Research Council Committee on Acute Exposure
Guideline
-George Corcoran served as a member, Academy of Toxicological Sciences Executive Board Nominating Committee
-George Corcoran served as symposium organizer and chair, Skeptically Re-Examining the Limits of Toxicology Evidence in the Courtroom
-Steven Firestine served as Chair, Symposium on Metabolomics in Drug Discovery, 247th American Chemical Society National Meeting
-Steven Firestine served as Chair, G-Quadruplexes as Drug Targets, 247th American Chemical Society National Meeting
-Steven Firestine served as Chair, International Symposium on Medicinal Chemistry, Novel Agents for the Treatment of C. difficile
-Anjan Kowluru served asAbstract Reviewer, Endocrine Society National Meetings
-Olivia Merkel served as Chair for one session of the 2014 Annual Meeting, Controlled Release Society and one session of the 2012 Annual Meeting, Controlled Release Society
-Olivia Merkel served as Chair for one sessions of the 2013 Annual Meeting, American Society of Gene and Cell Therapy
-Olivia Merkel served as Oral Presentation Judge, German Chapter of the Controlled Release Society
-Joshua Reineke served as Chair, Young Scientist Committee, Controlled Release Society
-Joshua Reineke served as for two sessions of the 2014 Annual Meeting, Controlled Release Society
-Timothy Stemmler served as Session Chair, Cells & Metals Gordon Conference, Salve Regina, RI
-Timothy Stemmler served as Session Chair, Metals in Biology Gordon Conference, Ventura, CA

Internal (External to College)
-Fei Chen served as Member, Data and Safety Monitoring Board, School of Medicine
-George Corcoran served as Member, WSU Michigan Translational Research and Commercialization Oversight Committee
-George Corcoran served as Member, WSU Technology Transfer and Commercialization Review Committee
-George Corcoran served as Member, OVPR Research Enhancement Program Review Panel
-George Corcoran served as Member, OVPR Research Equipment Award Review Panel
-George Corcoran served as Co-Chair, WSU Chairs and Directors Development Committee
-George Corcoran served as Member, Postdoctoral Office Advisory Board
-George Corcoran served as Member, Academic Departments and Programs Review Committee
-Aloke Dutta served as Member, University Advanced Patent Committee
-Steven Firestine served as Member, WSU Graduate Council
-Steven Firestine served as Member, Battelle-CTS Faculty Advisory Committee
-Steven Firestine served as Member, WSU New Programs Committee
-Steven Firestine served as Member, University Research Grant Committee, Physical Sciences
-Steven Firestine served as Member, Review Advisory Committee, Internal Review for Department of Biochemistry
-Fusao Hirata served as Member, University Fellowship Review Committee
-Fusao Hirata served as a Member and Chair, Radiation Safety and Radioisotope Committee
-Anjan Kowluru served as Member, WSU Graduate Council
-Anjan Kowluru served as Member, John D. Dingell VAMC Research Review Committee
-Anjan Kowluru served as the Chair, John D. Dingell VAMC of R&D Committee
-Anjan Kowluru served as Chair, John D. Dingell VAMC Research Integrity Inquiry Committee
-Anjan Kowluru served as Research Integrity Officer, John D. Dingell VAMC
-Anjan Kowluru Adjunct Professor, Institute for Environmental Health Sciences
-Olivia Merkel served as Reviewer, Graduate-Professional Scholarship competition
-David Pitts served as Co-Director, WSU Urban Watershed Environmental Research Group
- **David Pitts** served as Member, WSU Center and Institute Advisory Committee II
- **David Pitts** served as Member, WSU General Education Oversight Committee (GEOC)
- **David Pitts** served as Member, WSU Future Directions Subcommittee (GEOC)
- **David Pitts** served as Member, WSU Faculty Hearing Panel
- **Joshua Reineke** served as Member, Institute of Immunology Focus Group Committee
- **Joshua Reineke** served as Member, WSU Nano@Wayne Committee
- **Timothy Stemmler** served as Director, WSU Graduate Admissions Director Search Committee
- **Timothy Stemmler** served as Member, WSU Core Committee
- **Timothy Stemmler** served as Member, WSU Research Procurement Committee
- **Timothy Stemmler** served as Member, WSU Research Grant Review Committee
- **Timothy Stemmler** served as Member, Cardiovascular Research Institute P&T Committee
- **Timothy Stemmler** served as Student Advisor, SoM Basic Sciences Masters Program
- **Timothy Stemmler** served as Member, SoM MD/Ph.D. Program Oversight Committee
- **Timothy Stemmler** served as Member, SoM MD/Ph.D. Program Selection Committee
- **Timothy Stemmler** served as Member, SoM Executive Committee
- **Timothy Stemmler** served as Member, SoM Research Committee
- **Timothy Stemmler** served as Member, Review Advisory Committee, Internal Review for Cancer Biology Program
- **Timothy Stemmler** served as Member, WSU Library Assessment Task Force
- **Timothy Stemmler** served as Member, WSU Ph.D. Program Advisory Committee
- **Zhengping Yi** served as Member, WSU Diabetes and Obesity Team Science Steering Committee

### **Scientific Review Panels**

- **Deepak Bhalla** served as a Member, NIH Study Section for Centers of Excellence in Environmental Health Disparities
- **Fei Chen** served as Member, NIH/NIEHS ZES1 LWJ-K (R) 1 Special Emphasis Panel on Neurodegenerative Disorders
- **Fei Chen** served as Ad Hoc Reviewer, Hollings Cancer Center Translational Research Pilot Project, Medical University of South Carolina
- **Fei Chen** served as Member, NIH/NIEHS ZES1 LWJ-D (ME) 1 Mitochondrial and Nuclear Induced Cross-Talk Perturbations in Response to Environmental Insults
- **Aloke Dutta** served as Standing Study Section Member of DDNS Drug Discovery for the Nervous System
- **Aloke Dutta** served as NIH Standing Study Section Member, Molecular Probes, ZRG1 MDCN-C
- **Steven Firestine** served as Grant Reviewer, NIH ZRG1 IDM-U (10)B
- **Steven Firestine** served as Grant Reviewer, NIH NIAID Special Review Panel
- **Arun Iyer** served as External Independent Reviewer, Wellcome Trust (UK) & Department of Biotechnology (Government of India)
- **Arun Iyer** served as External Independent Reviewer, Emilia-Romagna Regional Health Authority and Regional Universities, Italy
- **Anjan Kowluru** served as Regular Member, Endocrinology A Study Section, Department of VA, National Affiliate
- **Anjan Kowluru** served as Member, The Fund for Scientific Research-FNRS, Brussels, Belgium
- **Anjan Kowluru** served as Reviewer, NIH/NIDDK pilot study for Peer Review of Grant Applications
- **Anjan Kowluru**, Abstract Reviewer, 16th International Congress of Endocrinology, and 96th Annual Meeting of the Endocrine Society
- **Anjan Kowluru** served as Member, Special Emphasis Review Panels on “Early-Stage Pharmaceutical Validation of Novel Targets and Accompanying Pre-Therapeutic Leads for Diseases of Interest to the NIDDK (R01)” and “Seeding Collaborations for Translational Research Applications
- **Olivia Merkel** served as Reviewer, Innovative Research in Cancer Nanotechnology (IRCN)
- **Olivia Merkel** served as Reviewer, Oak Ridge Associated Universities (ORAU), NASA
Postdoctoral Program (NPP)
- **Olivia Merkel** served as Reviewer, Pennsylvania Department of Health (PADOH)
- **Olivia Merkel** served as Reviewer, Kentucky Science & Engineering Foundation
- **Anna Moszcynska** accepted as Member, National Institutes of Health CSR Early Career Awards
- **David Pitts** served as a Member, Center and Institute Advisory Committee – II
- **David Pitts** served as a Member, General Education Oversight Committee
- **David Pitts** served as a Member, General Education Oversight – Future Directions Subcommittee
- **David Pitts** served as a Member, Faculty Hearing Panel
- **David Pitts** served as a Co-Director, Urban Watershed Environmental Research Group
- **Timothy Stemmler** served as Reviewer, Czech Science Foundation
- **Timothy Stemmler** served as Reviewer, NIH-ZRG1 Special Emphasis Study Section (Ad Hoc)
- **Timothy Stemmler** served as Reviewer, NIH-ZHD1 Special Emphasis Study Section (Ad Hoc)
- **Timothy Stemmler** served as Reviewer, NIH-ZGM1 Special Emphasis Study Section (Ad Hoc)
- **Timothy Stemmler** served as Reviewer, NIH-BCMB Special Emphasis Study Section (Ad Hoc)
- **Timothy Stemmler** served as Reviewer, NIH-P41 SSRL Facility Study Section (Ad Hoc)
- **Timothy Stemmler** served as Reviewer, NSF Biomolecules Study Section (Ad Hoc)
- **Timothy Stemmler** served as Reviewer, NIH MSFA Study Section (Current Full Member and Ad Hoc) (MSFA: Molecular Structure and Function Panel A)
- **Timothy Stemmler** served as Reviewer, NIH/BMR pilot study for Peer Review of Grant Applications
- **Timothy Stemmler** served as Reviewer, Friedreich's Ataxia Research Alliance (Ad Hoc)
- **Timothy Stemmler** served as Reviewer, Petroleum Research Fund (Ad Hoc)
- **Timothy Stemmler** served as Reviewer, Stanford Synchrotron Radiation Laboratory (Full Member)
- **Zhengping Yi** served as Reviewer, American Association of College of Pharmacy
- **Zhengping Yi** served as Reviewer, American Diabetes Association's Research Grant Review Committee
- **Zhengping Yi** served as Member, NIH/NIDDK, Clinical and integrative Diabetes and Obesity (CIDO) Study Section

**Editorial Boards**

- **Deepak Bhalla** served as Associate Editor, Inhalation Toxicology
- **Deepak Bhalla** served as Editorial Board Member, Journal of Toxicology and Environmental Health
- **George Corcoran** served as Editor, Journal of Pharmaceutical Sciences and Pharmacology
- **George Corcoran** served as Editor, MO Journal Toxicology
- **George Corcoran** served as Associate Editor, Toxicology and Applied Pharmacology
- **Fei Chen** served as Editorial Board Member, Occupational Diseases and Environmental Medicine
- **Fei Chen** served as Editorial Board Member, Journal of Hepatocellular Carcinoma
- **Fei Chen** served as Senior Editorial Board Member, American Journal of Cancer Research
- **Fei Chen** served as Editorial Board Member, Journal of Cancer Therapeutics and Research
- **Fei Chen** served as Editorial Board Member, Annals of Cancer Research
- **Aloke Dutta** served as an Honorary Editorial Board Member, Research and Reports in Medicinal Chemistry
- **Aloke Dutta** served as Editorial Board Member, Current Medicinal Chemistry-Central Nervous System
- **Aloke Dutta** served as Editorial Board Member, The Open Bioactive Compounds Journal
- **Aloke Dutta** served as Editorial Board Member, Journal of Pharmaceutics
- **Aloke Dutta** served as Editorial Board Member, Journal of Drug Discovery, Development and Delivery
- **Aloke Dutta** served as Editorial Board Member, Journal of Neurotransmitter
- **Steven Firestine** served as Editorial Board Member, ACS Combinatorial Science
- **Arun Iyer** served as Editorial Board Member, Journal of Pharmacovigilance and Drug Safety
- **Arun Iyer** served as Editorial Board Member, Modern Chemistry and Applications
- **Arun Iyer** served as Editorial Board Member, Journal of Pharmaceutics and Pharmacology
- **Anjan Kowluru** served as Editorial Board Member, Recent Patents on Endocrine, Metabolic and Immune Drug Discovery
- **Anjan Kowluru** served as Editorial Board Member, Biochemical Pharmacology
- **Anjan Kowluru** served as Editorial Board Member, Metabolic & Functional Research on Diabetes
- **Anjan Kowluru** served as Editorial Board Member, Islets
- **Anjan Kowluru** served as Editorial Board Member, JOP- Journal of Pancreas
- **Anjan Kowluru** served as Editorial Board Member, Journal of Diabetes and Metabolism
- **Anjan Kowluru** served as Editorial Board Member, OA Diabetes [London]
- **Anjan Kowluru** served as Editorial Board Member and Review Editor, Frontiers in Diabetes
- **Anjan Kowluru** served as Editorial Board Member, International Journal of Diabetology and Vascular Disease Research
- **Olivia Merkel** served as Editorial Board Member, Drug Delivery Letters
- **Olivia Merkel** served as Editorial Board Member, European Journal of Pharmaceutics and Biopharmaceutics
- **Zhengping Yi** served as Editorial Board Member, Journal of Proteomics & Bioinformatics
- **Zhengping Yi** served as Editorial Board Member, Journal of Data Mining in Genomics & Proteomics
- **Zhengping Yi** served as Editorial Board Member, Journal of Pharmacology and Toxicology

**Grants Awarded**

(Listed grants were active for some period during July 1, 2013 - June 30, 2014. Budgets are for 12 months)

**Federal Grants to Pharmaceutical Sciences Principal Investigators and Co-Principal Investigators, and Co-Investigators**

<table>
<thead>
<tr>
<th>Investigator</th>
<th>Agency</th>
<th>Title</th>
<th>Start Date</th>
<th>Project Budget</th>
<th>2013-2014 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fei Chen PI</td>
<td>NIH: NIEHS</td>
<td>Arsenic-induced miRNAs and Tumorogenesis</td>
<td>09/01/2012</td>
<td>$1,708,954</td>
<td>$336,242</td>
</tr>
<tr>
<td>Fei Chen PI</td>
<td>NIH: NIEHS</td>
<td>Mdid Gene and Histone Demethylation in Lung Cancer</td>
<td>2/9/2011</td>
<td>$1,246,321</td>
<td>$530,059</td>
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<tr>
<td>Fei Chen PI</td>
<td>NIH: NIEHS</td>
<td>HIF-1α in Cr(VI) Carcinogenesis</td>
<td>08/09/2010</td>
<td>$1,653,920</td>
<td>$220,368</td>
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<tr>
<td>Fei Chen Co-PI</td>
<td>NIH: NIEHS</td>
<td>The Center for Urban Responses to Environmental Stressors (CURES)</td>
<td>03/01/2013</td>
<td>$2,400,000</td>
<td>$702,590</td>
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<tr>
<td>Randall</td>
<td>NIH: NIGMS</td>
<td>MBRS / I MSD Program at WSU</td>
<td>04/01/2011</td>
<td>$2,971,180</td>
<td>$598,503</td>
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<td>Commissaris (Partic Fac)</td>
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<tr>
<td>Aloke Dutta PI</td>
<td>NIH: NINDS</td>
<td>Novel Neuroprotective Treatment of Parkinson's Disease</td>
<td>09/15/2011</td>
<td>$2,158,712</td>
<td>$642,664</td>
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<tr>
<td>Aloke Dutta PI</td>
<td>NIH: NIMH</td>
<td>Triple Uptake Inhibitors as Novel Antidepressants</td>
<td>07/01/2009</td>
<td>$1,921,135</td>
<td>$357,199</td>
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<tr>
<td>Aloke Dutta</td>
<td>NIH: NIDA</td>
<td>Biogenic Amine Transporters: Mechanism of Ligand Interaction</td>
<td>04/01/2012</td>
<td>$60,000</td>
<td>$20,000</td>
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<td>CoInvestigator</td>
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<tr>
<td>Name</td>
<td>Funding Agency</td>
<td>Project Title</td>
<td>Start Date</td>
<td>Initial Award</td>
<td>Remaining Award</td>
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<tr>
<td>Arun Iyer</td>
<td>NIH: NCI</td>
<td>Targeted Platinates / siRNA Combination Therapy for Resistant Lung Cancer</td>
<td>4/1/2014</td>
<td>$77,824</td>
<td>$38,518</td>
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<tr>
<td>Anjaneyulu Kowluru Multi-PI</td>
<td>NIH: NEI</td>
<td>NADPH Oxidase in Diabetic Retinopathy</td>
<td>04/01/2012</td>
<td>$1,520,000</td>
<td>$304,000</td>
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<tr>
<td>Anjaneyulu Kowluru Co-PI</td>
<td>NIH: NEI</td>
<td>NADPH Oxidase in Diabetic Retinopathy - Supplement</td>
<td>08/01/2012</td>
<td>$50,500</td>
<td>$50,500</td>
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<tr>
<td>Anjaneyulu Kowluru PI</td>
<td>NIH: NIDDK</td>
<td>Training Program in Endocrine and Diabetes Research</td>
<td>2010</td>
<td>$2,171,203</td>
<td>$190,000</td>
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<tr>
<td>Anjaneyulu Kowluru PI</td>
<td>DHHS: VA</td>
<td>Senior Research Career Scientist Award</td>
<td>01/10/2006</td>
<td>$1,120,000</td>
<td>$175,000</td>
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<tr>
<td>Anjaneyulu Kowluru PI</td>
<td>DHHS: VA</td>
<td>Diabetes: ERK5 and Vascular Inflammation</td>
<td>10/1/2013</td>
<td>$1,112,954</td>
<td>$150,000</td>
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<tr>
<td>Anjaneyulu Kowluru PI</td>
<td>DHHS: VA</td>
<td>Mechanisms of Islet Beta Cell Dysfunction in Diabetes</td>
<td>04/04/2010</td>
<td>$650,000</td>
<td>$150,000</td>
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<tr>
<td>Anna Moszczynska PI</td>
<td>NIH: NIDA</td>
<td>The Role of Ubiquitination in Methamphetamine Neurotoxicity (CDA)</td>
<td>09/01/2010</td>
<td>$750,000</td>
<td>$38,500</td>
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<tr>
<td>Anna Moszczynska PI</td>
<td>NIH: NIDA</td>
<td>“Proteasome and parkin as drug targets in methamphetamine neurotoxicity”</td>
<td>09/15/2013</td>
<td>$1,691,000</td>
<td>$342,000</td>
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<tr>
<td>David Pitts Co-PI</td>
<td>NSF</td>
<td>FSML Planning Grant: HEART Field Center</td>
<td>08/01/2013</td>
<td>$24,958</td>
<td>$24,958</td>
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<tr>
<td>David Pitts Co-PI</td>
<td>EPA</td>
<td>Network Exchange Challenge Grant - Subcontract</td>
<td>07/01/2012</td>
<td>$23,000</td>
<td>$23,000</td>
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<tr>
<td>Zhihui Qin PI</td>
<td>Department of Defense</td>
<td>Prostate Cancer Research Program Idea Development Award for New Investigators</td>
<td>08/01/2012</td>
<td>$225,000</td>
<td>$154,815</td>
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<tr>
<td>Timothy Stemmler PI</td>
<td>NIH: NIDDK</td>
<td>Structural Insights into the Function of Frataxin</td>
<td>9/16/2011</td>
<td>$1,541,504</td>
<td>$367,055</td>
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<tr>
<td>Timothy Stemmler Multi-PI</td>
<td>NIH: NIGMS</td>
<td>Regulation of Mitochondrial Nfs1 Cysteine Desulfurase</td>
<td>2014</td>
<td>$2,432,287</td>
<td>$30,000</td>
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<tr>
<td>Timothy Stemmler PI</td>
<td>NIH: NIDDK</td>
<td>Characterizing Isu Scaffolding Protein and ISC Multiprotein Complex Structures &amp; Function In Vitro</td>
<td>2014</td>
<td>$217,970</td>
<td>$43,600</td>
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<tr>
<td>Duska Separovic PI</td>
<td>NIH: NCI</td>
<td>Sphingolipids in Cell Death after Photodamage</td>
<td>08/01/2009 NCE</td>
<td>$970,000</td>
<td>$43,000</td>
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<tr>
<td>Zhengping Yi PI</td>
<td>NIH: NIDDK</td>
<td>Human Skeletal Muscle Proteome &amp; Phosphoproteome in Obesity and Type 2 Diabetes</td>
<td>5/1/2014</td>
<td>$114,000</td>
<td>$114,000</td>
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<tr>
<td>Zhengping Yi PI</td>
<td>NIH: NIDDK</td>
<td>Human Skeletal Muscle Proteome &amp; Phosphoproteome in Obesity and Type 2 Diabetes</td>
<td>08/01/2014</td>
<td>$1,349,133</td>
<td>$267,412</td>
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**Foundation Grants to Pharmaceutical Sciences Investigators**
<table>
<thead>
<tr>
<th>Investigator</th>
<th>Agency</th>
<th>Title</th>
<th>Start Date</th>
<th>Project Budget</th>
<th>Year Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aloke Dutta</td>
<td>M. J. Fox Foundation</td>
<td>D-512, a novel multifunctional D2/D3 receptor agonist for the treatment of PD.</td>
<td>09/09/2014</td>
<td>$74,949</td>
<td>$34,192</td>
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<tr>
<td>Anjaneyulu</td>
<td>Juvenile Diabetes Foundation</td>
<td>Tiam1-Rac1 Signaling Axis Mediates Beta-Cell Dysfunction in Type 1 Diabetes</td>
<td>08/01/2012</td>
<td>$110,000</td>
<td>$35,000</td>
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<tr>
<td>Olivia Merkel</td>
<td>Richard Barber Foundation</td>
<td>Tracking Nanoparticle Uptake And Release Of Encapsulated Therapeutic RNA</td>
<td>05/01/2014</td>
<td>$60,000</td>
<td>$60,000</td>
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<tr>
<td>Timothy</td>
<td>American Heart Association</td>
<td>Mechanistic Studies: Fe-S Cluster Assembly Related To Friedreich’s Ataxia and Cardiovascular Disorders</td>
<td>2012</td>
<td>$52,000</td>
<td>$26,000</td>
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<tr>
<td>Stemmler</td>
<td>American Heart Association</td>
<td>Characterizing Isu Scaffolding Protein &amp; ISC Multiprotein Complex Structures Function In Vitro</td>
<td>2014</td>
<td>$52,000</td>
<td>$26,000</td>
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<tr>
<td>Zhengping Yi</td>
<td>American Diabetes Assn Translational Science Award</td>
<td>Effect of Exercise on Human Skeletal Muscle Tyrosine Phosphoproteome</td>
<td>07/01/2013</td>
<td>$560,000</td>
<td>$180,000</td>
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<tr>
<td>Zhengping Yi</td>
<td>Minority Undergraduate Internship Award</td>
<td>Research Supplements to promote diversity in Health-Related Research</td>
<td>01/01/2014</td>
<td>$3,000</td>
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**University / College Awards to Pharmaceutical Sciences Principal Investigators**

<table>
<thead>
<tr>
<th>Investigator</th>
<th>Agency</th>
<th>Title</th>
<th>Start Date</th>
<th>Project Budget</th>
<th>Year Budget</th>
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<tbody>
<tr>
<td>Fei Chen</td>
<td>WSU CURES Pilot Project</td>
<td>Soil Arsenic and Cancer</td>
<td>05/01/2014</td>
<td>$100,000</td>
<td>$33,333</td>
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<tr>
<td>Randall</td>
<td>EACPHS: FRAP</td>
<td>The Effects Of Texting And DUI Simulation On Driving Performance In Human Driving Simulator</td>
<td>02/01/2014</td>
<td>$19,950</td>
<td>$9,950</td>
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<tr>
<td>Aloe Dutta</td>
<td>WSU: President’s Brain Initiative research fund</td>
<td>Multifunctional Alpha Synuclein Modulator As Neuroprotective Treatment Agents For Parkinson’s Disease</td>
<td>06/01/2014</td>
<td>$196,493</td>
<td>143,080</td>
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<tr>
<td>Steven Firestine</td>
<td>WSU Faculty Competition</td>
<td>Postdoctoral Fellow Award</td>
<td>05/01/2012</td>
<td>$52,500</td>
<td>$26,250</td>
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<tr>
<td>Steven Firestine</td>
<td>WSU</td>
<td>Technology Development Award</td>
<td>08/26/2013</td>
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<tr>
<td>Steven Firestine</td>
<td>WSU: OVPR</td>
<td>Bridge Fund</td>
<td>01/16/2014</td>
<td>$35,000</td>
<td>$35,000</td>
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<tr>
<td>Name</td>
<td>Sponsor</td>
<td>Project Description</td>
<td>Start Date</td>
<td>Funding 1</td>
<td>Funding 2</td>
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</tr>
<tr>
<td>Anjaneyulu Kowluru</td>
<td>WSU: OVPR</td>
<td>Research Stimulation Fund</td>
<td>09/2013</td>
<td>$35,000</td>
<td>$35,000</td>
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<tr>
<td>Anjaneyulu Kowluru</td>
<td>EACPHS: FRAP</td>
<td>Frap Collaborative Research Award</td>
<td>02/01/2014</td>
<td>$10,000</td>
<td>$10,000</td>
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<tr>
<td>Olivia Merkel</td>
<td>EACPHS: FRAP</td>
<td>Targeted Delivery Of SiRNA As Anti-Inflammatory Treatment For Asthma</td>
<td>02/01/2013</td>
<td>$10,000</td>
<td>$10,000</td>
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<tr>
<td>Olivia Merkel</td>
<td>WSU: OVPR BOOST Grant</td>
<td>Targeted SiRNA Delivery To Activated T Cells For Anti-Inflammatory Therapy Of Asthma</td>
<td>01/01/14</td>
<td>$35,000</td>
<td>$35,000</td>
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<tr>
<td>Olivia Merkel</td>
<td>Angelika Burger Postdoc Fellowship</td>
<td>Novel Transferrin Receptor Targeted Nanoparticles For SiRNA Delivery To Breast Cancer</td>
<td>02/01/14</td>
<td>$50,000</td>
<td>$50,000</td>
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<tr>
<td>Olivia Merkel</td>
<td>WSU Strategic Research Initiative Grant</td>
<td>Nanoparticle Delivery Of SiRNA Targeting The Oncogenic Histone Modifying Enzyme GASC1 In Basal Breast Cancer</td>
<td>09/01/2012</td>
<td>$100,000</td>
<td>$50,000</td>
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<tr>
<td>Olivia Merkel</td>
<td>WSU Nano- Incubator Award</td>
<td>Development Of Folate Receptor Targeting Nanoparticles For Co-Delivery Of PTX And SiRNA To Avoid Chemoresistance In Ovarian Cancer</td>
<td>09/01/2013</td>
<td>$35,000</td>
<td>$35,000</td>
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<tr>
<td>Anna Moszczynska</td>
<td>EACPHS: FRAP</td>
<td>E3 Ligase Parkin In Neuronal Survival, Recovery From Methamphetamine Toxicity</td>
<td>03/18/2013</td>
<td>$10,000</td>
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<tr>
<td>Anna Moszczynska</td>
<td>WSU University Research Grant</td>
<td>E3 Ligase Parkin In Neuronal Survival, Recovery From Methamphetamine Toxicity</td>
<td>05/14/2013</td>
<td>$10,000</td>
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<tr>
<td>Zhihui Qin</td>
<td>Karmanos Cancer Institute</td>
<td>McLaren Program Funding Support</td>
<td>May 2014</td>
<td>$20,000</td>
<td>$20,000</td>
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<tr>
<td>Joshua Reineke</td>
<td>EACPHS: FRAP</td>
<td>Absorption Of Trimethoprim / Sulfamethoxazole In Roux Y Gastric Bypass Patient</td>
<td>6/2014</td>
<td>$10,000</td>
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<tr>
<td>Duska Separovic</td>
<td>WSU: OVPR Bridge Funding</td>
<td>Sphingolipids In Cancer Cell And Tumor Response After Photodynamic Therapy</td>
<td>01/2014</td>
<td>$35,000</td>
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<tr>
<td>Zhengping Yi</td>
<td>WSU: Faculty Competition</td>
<td>Postdoctoral Fellow Award</td>
<td>06/01/2013</td>
<td>$60,000</td>
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<tr>
<td>Zhengping Yi</td>
<td>WSU: Faculty Competition</td>
<td>Bridge Funding</td>
<td>05/01/2014</td>
<td>$35,000</td>
<td>$35,000</td>
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</table>
O Invited Presentations

- **Fei Chen**, Mineral dust induced gene and environmental factors in lung cancer: Department of Biochemistry, School of Medicine, Wayne State University

- **Fei Chen**, Environmental factors and human cancer, Wuhan Central Hospital, Tongji Medical School, Huazhong University of Science and Technology

- **Fei Chen**, Environmental factors and MDIG gene in lung cancer, Department of Environmental Health, University of Cincinnati

- **George Corcoran**, Skeptically Examining the Limits of Toxicology Evidence in the Courtroom, 52nd Annual Meeting of the Society of Toxicology, San Antonio, TX

- **George Corcoran**, Skeptically Re-Examining the Limits of Toxicology Evidence in the Courtroom, 53rd Annual Meeting of the Society of Toxicology, Phoenix, AZ

- **George Corcoran**, Unparalleled Opportunities for Pharmacy, College of Pharmacy, University of Michigan, Ann Arbor, MI

- **Aloke Dutta**, A Novel approach toward development of multifunctional agents for symptomatic and Neuroprotective treatment of Parkinson’s disease International conference, 7th Neurodegenerative Conditions Research & Development

- **Aloke Dutta**, Multifunctional Drug Development Approach for Treatment of Depression and Neurodegenerative disorder, Div of Medicinal Chemistry and Pharmacognosy, Ohio State University

- **Arun Iyer**, Multifunctional Nano-Platforms for Tumor-Targeted Imaging and Therapy. Department of Pharmaceutical Sciences, Texas Tech University Health Science Center, School of Pharmacy, Amarillo, TX

- **Arun Iyer**, Multifunctional Theranostic Nano-Platforms for Targeted Imaging and Therapy of Cancers. Department of Pharmaceutical Sciences, Eugene Applebaum College of Pharmacy and Health Sciences, Wayne State University, Detroit, MI

- **Anjan Kowluru**, Department of Pharmaceutical Sciences, North Dakota State University, Fargo

- **Anjan Kowluru**, Islet Society Meetings, Stellenbosch, South Africa

- **Olivia M Merkel**, Nanodevices for cytosolic delivery of siRNA, ICNFA’14 - 5th International Conference on Nanotechnology: Fundamentals and Applications, Prague, Czech Republic

- **Olivia M Merkel**, Ex vivo and In Vivo siRNA Delivery to Activated T Cells as Novel Anti-Inflammatory Asthma Therapy, 5th FIP Pharmaceutical Sciences World Congress, Melbourne, Australia

- **Olivia Merkel**, Ex Vivo and In Vivo T Cell Targeting, Center of Molecular Medicine and Genetics, Wayne State University, Detroit, MI

- **Olivia Merkel**, influence of Polymer Architecture on the Efficiency of Non-Viral siRNA Delivery, Technical University of Graz, Graz, Austria

- **Olivia Merkel**, Pulmonary siRNA Delivery for Anti-inflammatory Asthma Therapy, Ohio State University, Columbus, OH

- **Olivia Merkel**, Targeted Nanoparticles for siRNA Delivery, University of Windsor, Windsor, ON, Canada

- **Olivia Merkel**, Non-viral siRNA Delivery for Anti-inflammatory Therapy, University of Memphis, Memphis, TN

- **Olivia Merkel**, Polymeric Materials for Targeted siRNA Delivery, Northern Illinois University, DeKalb, IL

- **Olivia Merkel**, Polymeric Materials for siRNA Delivery, University of Utah, Salt Lake City, UT

- **Olivia Merkel**, Polymeric Materials for siRNA Delivery, West Virginia University, Morgantown, WV

- **Anna Moszczynska**, Institute of Pharmacy and Molecular Biotechnology, University of Heidelberg, Heidelberg, Germany.
-Anna Moszczynska, The TM's 3rd World Molecular and Cell Biology Online Conference
-Timothy Steimlmer, International BioMetals Meeting, Duke University, Raleigh, NC, Molecular Factors that Drive Mitochondrial Fe-S Cluster Biosynthesis
-Timothy Steimlmer, Department of Chemistry, Worcester Polytechnic Institute, Worhester, MA, Molecular Level Characterization of the Mitochondrial Fe-S Cluster Assembly Pathway
-Timothy Steimlmer, Cells and Metals Gordon Conference, Session Chair, Salve Regina, RI, Genetics and Genomics of Metal Metabolism
-Timothy Steimlmer, Department of Chemistry and Biophysics, Cornell Univ., Ithaca, NY Characteristics of the Mitochondrial Fe-S Cluster Assembly Pathway
-Timothy Steimlmer, Department of Chemistry, University of Massachusetts, Amherst, MA Characteristics of the Mitochondrial Fe-S Cluster Assembly Pathway
-Timothy Steimlmer, Metals in Biology Gordon Conference, Session Chair, Ventura, CA, Reactivity and Biogenesis of Iron-Sulfur Clusters
-Timothy Steimlmer, Department of Physiology, Wayne State University, Detroit, MI, Molecular Characteristics of the Mitochondrial Fe-S Cluster Assembly Pathway
-Timothy Steimlmer, Department of Pharmaceutical Sciences, Wayne State University, Detroit, MI, Molecular Characteristics of the Mitochondrial Fe-S Cluster Assembly Pathway
-Timothy Steimlmer, Department of Pharmaceutical Sciences, University of Toledo, Toledo, OH, Molecular Level Characterization of the Mitochondrial Fe-S Cluster Assembly Pathway
-Timothy Steimlmer, Department of Chemistry, Rice University, Houston, TX, Characteristics of the Mitochondrial Fe-S Cluster Assembly Pathway
-Timothy Steimlmer, Stanford Synchrotron Radiation Lightsource, Stanford University, Palo Alto, CA, EXAFS – A Versatile Tool for Exploring Protein Structure/Function Correlations
-Zhengping Yi, Increased Interaction with Insulin Receptor Substrate-1, a New Abnormality in Insulin Resistance and Type 2 Diabetes, Grand round, Division of Endocrinology, SOM

Publications (January 1, 2013 - December 31, 2014)


Shah M, Voshavar C, Xu L, Rajagopalan S, Andersen J, Dutta AK: High affinity D2/D3 agonist


Dewal MB, **Firestone SM**: Site-directed mutagenesis of catalytic residues in N5-carboxyaminoimidazole ribonucleotide synthetase. Biochemistry.


**Iyer AK**, Duan Z, Amiji MM: Polymeric nanocarriers based nucleic acid therapeutics for treating


Mohammed A, **Kowluru A**: Activation of apocynin-sensitive NADPH oxidase (Nox2) activity in INS-1 832/13 cells under glucotoxic conditions. Islets. 5:129-31, 2013.


Pandey A, Gordon DM, Pain J, Stemmler TL, Dancis A, Pain D: Frataxin directly stimulates mitochondrial cysteine desulphurase by exposing substrate-binding sites and a mutant Fe-S cluster


**Book Chapters and Books**


Singh A, Iyer AK, Amiji MM: Polymeric Nanosystems for Integrated Image-Guided Therapy. In:


**Patents**


**Dutta AK***, Tri-Substituted 2-Benzhydryl-5-Benzamino-Tetrahydro- Pyran-4-Ol And 6-Benzhydryl-4-Benzyamino-Tetrahydro-Pyran-3-OI Analogues, And Novel 3,6-Disubstituted Pyran Derivatives. European Pat. No. EP 1 976 381 B1

**Dutta AK**, Tri-Substituted 2-Benzhydryl-5-Benzamino-Tetrahydro- Pyran-4-Ol And 6-Benzhydryl-4-Benzylamino-Tetrahydro-Pyran-3-OI Analogues, And Novel 3,6-Disubstituted Pyran Derivatives. European Pat. No. EP 1 734948 B1


Amiji MM, **Iyer AK**, Biodegradable Polymeric Buffers. Provisional US pate filed under Northeastern University, Filing Date: 02/07/2013, PCT/US2013/049114, WO/2014/008283

**Abstracts Presented / Published**


Vedachalam S, Das B, Antonio T, Reith M, Dutta AK: Further Structure Activity Relationship (SAR) study of novel hybrid N^6-(2-(4-((1H- Indole)piperazine-1-yl)ethyl)-N^6-propyl-4,5,6,7-


Veluthakal R, Kowluru A, Kowluru RA: Diabetic retinopathy and regulation of p38 MAP kinase by Tiam1Rac1 signaling module. Annual meetings of ARVO. 2014.

Kowluru RA, Kowluru A: Diabetic Retinopathy and Activation of NADPH Oxidase 2 by Lipotoxicity. 16th International Congress of Endocrinology & the Endocrine Society’s 96th Annual Meeting. 2014.


Kowluru A: Glucotoxicity promotes activation of protein phosphatase 2A in islet β-cells. 6th Islet Society meetings. Stellenbosch, South Africa. 2014.


Kowluru RA, Kowluru A: Lipotoxicity and NADPH Oxidase-2 Activation in Diabetic Retinopathy. 6th Islet Society meetings. Stellenbosch, South Africa. 2014.


Jones S, Merkel OM: siRNA Targeted Delivery to Ovarian Cancer Cells via Folate Conjugated Triblock Co-polymer, Poster Presentation, KCI Molecular Therapeutics Annual Research Symposium, Detroit, MI, June 18, 2014.


Moszczynska A: Methamphetamine increases the levels of dopamine D2 receptor and dopamine transporter in dopaminergic nerve terminals. The TM’s 3rd World Molecular and Cell Biology online conference. Feb 2014.


Chauhan H, Moszczynska A. The role of CDCrel-1 in methamphetamine mediated impaired trafficking of VMAT2. The 45th annual meeting Michigan Chapter Society for Neuroscience. Kalamazoo, MI. May 2014

Zein MA, McElmurry SP, Kashian DR, Savolainen PT, Pitts DK: Evaluating a novel optical bioassay for measuring sub-lethal toxicity in Daphnia pulex. IAGLR June 2013.


**Department Seminars**

**Fall 2013**

-August 29, Multifunctional Theranostic Nano-Platforms for Targeted Imaging and therapy of cancers, Arun K. Iyer, Ph.D, Research Assistant Professor, Department of Pharmaceutical Sciences, School of Pharmacy, Bouve College of Health Sciences, Northeastern University, Boston

-September 4, Development of Polymeric Particles for Cancer Nanomedicine, Rong Tong, Ph.D, Postdoctoral Associate, Children's Hospital Boston, Harvard Medical School, Koch Institute for Integrative Cancer Research, MIT, Boston

-October 1, How Does the C1858T SNP of PTPN22 Affect the risk of autoimmune Diseases?, I-Cheng Ho, MD, Ph.D, Associate Professor of Medicine, Harvard Medical School, Associate Physician, Brigham and Women's Hospital, Boston

-October 16, High Blood Pressure (Hypertension) is Widespread in Detroit, What we can do about it?, Oscar A. Carretero, MD, 2013, EACPHS Research Forum Keynote Speaker Head, Hypertension and Vascular Research Division Henry Ford, Hospital, Detroit

-October 23, Molecular Characteristics of the Mitochondrial Iron-Sulfur Cluster Assembly Pathway, Timothy L. Stemmler, Ph.D., Professor, Department of Pharmaceutical Sciences, Wayne State University, Detroit

-October 30, Effects of Calorie Restriction and Exercise on insulin signaling and glucose uptake of skeletal muscles, Gregory D. Cartee, Ph.D., Professor, School of Kinesiology, Department of Molecular & Integrative Physiology, University of Michigan, Ann Arbor

-November 6, Translating Novel Technologies into Next Generation Therapeutics: The Role of Drug Delivery, Dr. Paul Burke, Principal of Burke Bioventures LLC

-November 20, Phage Panning, Peptides and Polymers: From Ligand Identification to In Vivo Applications for Drug Delivery, Dr. Suzie H. Pun, Robert J. Rushmer Associate Professor, Department of Bioengineering, University of Washington, Seattle
-December 4, Structure, Function and Selective Inhibition of G Protein-Coupled Receptor Kinases, John J. Tesmer, Ph.D, Professor, Departments of Pharmacology and Biological Chemistry, University of Michigan, Medical School, An Arbor

-December 11, Stress and the Neurotoxicity of Speed, Bryan K. Yamamoto, Ph.D, Professor and Chairman, Department of Neurosciences, University of Toledo, Toledo

**Winter 2014**

-January 15, Chemoprevention of Prostate Cancer, Chendil Damodaran, Ph.D, Associate Professor, Biomedical Sciences, Paul L. Foster School of Medicine, Texas Tech University Health Sciences Center, El Paso

-January 29, mTOR Signaling In Beta-Cells And Regulation Of Lucose Homeostasis, Ernesto Bernal-Mizrachi, MD, Larry D. Soderquist Professor, Associate Professor of Internal Medicine, University of Michigan Health System, Ann Arbor

-February 5, SMART Study Designs for Developing Interventions, Susan A. Murphy, PH.D, H.E. Robbins Professor of Statistics & Psychiatry, Research Professor, Institute for Social Research, University of Michigan, Ann Arbor

-February 19, Cysteine desulfurase and frataxin in mitochondrial Fe-S cluster assembly, Andrew Dancis, MD, Associate Professor of Medicine, University of Pennsylvania, Philadelphia

-February 26, Regulation of nutrient homeostasis and neurodegeneration by the insulin receptor substrate signaling cascades, Morris F. White, Ph.D, Professor, Boston Children's Hospital, Harvard Medical School, Boston

-April 16, Translating Findings from Large Data Sets to the Clinic: lessons from Genitourinary Cancers, Scott A. Tomlins, MD/Ph.D, Assistant Professor of Pathology and Urology, Member, Michigan Center for Translational Pathology, University of Michigan Medical school, Ann Arbor

-April 23, Leptin's therapeutic Odyssey: still more to come, Elif Oral, MD, Associate Professor, Division of Metabolism, Endocrinology and Diabetes, University of Michigan, Ann Arbor

-April 30, Creating translatable techniques for repairing tissues using stem cells and biomaterials, Mai T. Lam, Ph.D., Assistant Professor, Biomedical Engineering Department, College of Engineering, Wayne State University

-May 21, Tumor Accumulation and Penetration of Nanomedicines, Christine Allen, Ph.D, Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario

-June 11, Proteomic approaches to study insulin resistance and type 2 diabetes in human skeletal muscle, Kurt Højlund, MD/Ph.D., Chief Physician & Associate Professor, Department of Endocrinology, University of Southern Denmark & Odense University Hospital, Odense, Denmark