Department of Pharmaceutical Sciences

2016 Annual Report

* Report is for the calendar year 2016
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I. Executive Summary

The Department of Pharmaceutical Sciences (PSC) is a multidisciplinary academic unit formed from pharmacy faculty in 1982 to house the disciplines of medicinal chemistry, pharmacology/toxicology and pharmaceutics. The Department offers MS and Ph.D. degrees in Pharmaceutical Sciences. In addition, our Faculty provide extensive instruction in the professional Doctor of Pharmacy (PharmD) program. In 2016, the Department had 22 exceptional Faculty members and 45 productive graduate students. The Faculty have broad interests, with notable strengths in diabetes, neuroscience, cancer, environmental toxicology and infectious disease research.

Dr. George Corcoran has served as chair and chief administrative officer of the department since 1996. Additional leadership and management are provided by Directors, the faculty, and critical standing committees. Many policies critical to the running of the Department are proscribed by a collectively bargained union contract and the Department is guided by our strategic plan.

In 2016, the Faculty within the Department were highly productive. According to the American Association of Colleges of Pharmacy (AACP) 2014 Research Survey, the Department ranks 37th in NIH funding, with 63% of Faculty are funded. The total number of research publications/abstracts in 2016 from our Department (113) is greater than those of our comparator and aspirational schools. In 2016, the PSC Faculty had a national presence while at the same time embracing the urban mission of the University.

The Department’s graduate program includes degrees offered at both the Ph.D. and MS levels. The Ph.D. program in Pharmaceutical Sciences continues to be highly multi-disciplinary and all students are required to take courses in each of the three disciplines. In 2016, the Department had 23 students in our Ph.D. program, many of whom were funded on a combination of Departmental and Graduate School resources, or through mentor grant support. The Department is unique among similarly ranked institutions in also offering a multi-disciplinary, research-intensive, entry-level MS program. In 2016, there were 22 MS students in the program. These students are consistently highly successful and the academic quality of MS students is comparable to those entering the Ph.D. program.

The Department does not have an undergraduate program. The primary non-graduate teaching is conducted in the PharmD program. Our faculty coordinate courses in the PharmD program and contribute to teaching throughout the curriculum. The Department offers the Summer Undergraduate Research Fellowship (SURF) program, which provides a research-intensive program for highly motivated students. The majority of our SURF students are from Michigan and SURF graduates have been successful in advancing to graduate or professional programs. In 2016, the department hosted 8 SURF students.
II. Who We Are and What We Do: At a Glance

Who We Are

Faculty: 50 (22 Full-Time, 1 Part-Time, 23 Adjunct, 4 Emeritus).
Staff: 3
Graduate Students: 45 (21 Ph.D. Candidates and 2 MD/Ph.D. Candidates, 22 MS Candidates)
Postdoctoral Fellows: 12
Research Assistants / Associates / Scientists: 8
PharmD / SURF / Undergraduate / Intern / Volunteer / Other Researchers: 50

What We Do

Degrees Granted: 9 (4 Ph.D., 5 M.S.)
Honors / Awards: 4 (2 University, 2 College)
Professional / Scientific Leadership: 42 (16 External, 26 Internal)
Scientific Review Panels: 54 (9 NIH)
Editorial Boards: 46 (2 Editors, 3 Associates, 1 Senior, 1 Review, 1 Regional, 1 Honorary, 1 Guest, 20 Board Members)
Grants: 13 (8 Federal, 3 Foundation, 2 University/College)
Invited Presentations: 25
Publications: 92 (54 Papers, 3 Book Chapters, 3 Patents/Disclosures, 32 Abstracts)
Department Seminars: 27

III. 2016 in Review

This review attempts to capture essence of the department in 2016 through its programs, activities, accomplishments, progress, culture and life and is organized under the framework of the Department Strategic Plan 2012-2016 short-term and long-term goals. The Chair oversees implementation of the PSC 2012-2016 Strategic Plan by champions and lead stakeholders in all areas,

Short Term Goals

1. Increase faculty satisfaction regarding administrative support for research through added personnel, strengthened policies, & advocacy.

   In the area of key personnel, the department has been able to maintain administrative support despite staff turnover. PSC had complete turnover of its staff in 2016, including Administrative Assistant, Secretary, and an experienced Student Assistant. All positions have been filled and high productivity has been maintained.
A challenge we continue to face is high office workload, and added workload associated with the maturation of four relatively recent faculty additions and their growing laboratories. Competition for department time and other resources expanded at an unprecedented rate in 2016. Major activities included the PharmD ACPE reaccreditation Self-Study assessment and Interim Accreditation Reports, full roll out of the renewed PharmD curriculum, the first-ever NCA HLC Self-Study Evaluation Reports of the Pharmaceutical Sciences PhD and MS programs, and an Academic Program Review for PhD and MS programs. The PharmD and HLC reviews are high stakes and are essential for successful re-accreditation. Other competition for resources included university-wide implementation of online performance assessment systems and a new research grants management system. Advancement of the department research mission has also been hindered due to recurring budget cuts.

The college added an Accounting Specialist, to serve as a new research position focused on researcher post-award support. Dr. Stemmler, who served as the PSC Director of Research, was appointed Associate Chair, our first since 2002. Dr. David Pitts was appointed as the first PSC Director of Curriculum, and Dr. Steven Firestine continues service as the Director of the Graduate Program.

A new department task force was formed to enhance faculty nomination for 8 top university awards, including the Academy of Scholars, the Academy of Scholars Junior Faculty Award, the Board of Governors Faculty Recognition Award, the Career Development Chair Award, multiple Distinguished Faculty Fellowship Awards, the President’s Award for Excellence in Teaching, the Distinguished Graduate Faculty Award, and the Outstanding Graduate Mentor Award. In 2016, Dr. Kowluru received a University Distinguished Professor Award and Dr. Firestine received a University Outstanding Graduate Mentor Award.

2. Revitalize the graduate curriculum by improving course content, offering development opportunities, and advancing curricular assessment.

The faculty approved a new admission policy and a new recruitment plan developed by the Graduate Program Committee. The class of 2016 PhD candidates included 4 department supported GRAs and 4 PhD candidates on other support. Our first MD/PhD candidate is nearing graduation. The Awards Committee recognized the 2016 George C. Fuller Endowed Scholarship recipient, Mr. Vaibhav Sidarala from the Kowluru lab, and two 2016 Frank O. Taylor Scholarship recipients Ms. Yuran Xie from the Merkel lab and Ms. Shaimaa Yousef from the Iyer lab.

The program completed the fourth year of a redesigned graduate curriculum. Curricular restructuring has increased course rigor but also produced a small increase the number of dismissals. The Doctor of Pharmacy curriculum continued to evolve, including the first offerings of PSC 4115 Pharmaceutics I, and PSC 4125 Introduction to Pharmaceutical Sciences in Fall 2016. Pharmaceutical Sciences played an active role in all areas of the development and roll out of the renewed PharmD curriculum in August 2016. To support and achieve the goal of university reaccreditation by the Higher Learning Commission, and to meet the needs of preparing an extensive Department self-study evaluation in support of a
2016 Pharmaceutical Sciences Academic Program Review, the Chair created the Pharmaceutical Sciences Assessment Committee guided by Chair Fusao Hirata and Co-Chair Justine Gortney. It prepared materials for a comprehensive self-study report for the Academic Program Reviews, created and mapped learning outcomes for the PhD and the MS curricula and developed tools, metrics and methods for collecting and analyzing data needed to strengthen education outcomes. The committee will review the Assessment Plan yearly and propose plan revisions to the Department Chair in May. The committee will submit an Assessment Report to the Department Chair annually.

The Assessment Committee completed the preparation of the Pharmaceutical Sciences Self-Study 2009-2014 in late 2015 and presented it to the faculty for approval in February 2016. Internal and external evaluation team reports cited strengths including: 1. superb students who are comparable to those in nationally elite programs, 2. outstanding and growing research program driven by a well-funded faculty with productivity that meets or exceeds both comparator and aspirational schools, 3. research-intensive entry level MS program that is unique among Pharmaceutical Sciences programs, 4. outstanding time-to-graduation (one year shorter than WSU average) as well as outstanding retention (25% above WSU and 30% above national average), 5. maintenance of program quality and growth in size despite nearly annual budget cuts, and 6. program leadership and administrative structure.

Areas requiring attention or investment were 1. The number of GRAs / faculty member, 2. staff support, 3. numbers of domestic and diverse students and systematic recruiting, 4. some policies and procedures, 5. replacement of retired and departed faculty, and 6. opportunities for student teaching. The department was among the most active in the BEST and ReBuild programs, extending experiences to careers outside academics. Revised formal descriptions, policies and charges were prepared for the Appointment, Awards, Budget, Faculty Search, Promotion, and Tenure committees, and the Biosafety Officer and Associate Chair.

New deadlines were established for forming thesis and dissertation committees, completing written qualifying examinations, completing the prospectus and oral qualifying examinations, and transferring from MS to the PhD program and the Graduate Program Policies and Procedures manual underwent major revision. The 16th Summer Undergraduate Research Fellowship (SURF) program was held.

The department appointed its first Director of Education, Dr. David Pitts in July 2016. His responsibilities of the Director include 1) overseeing planning for improving PhD, MS, SURF, Postdoctoral, PharmD/PhD, MD/PhD, 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. He has taken a leadership role in the PharmD Research Scholars track, and preparing materials for the HLC review.

A most significant and sad milestone was reached in February of 2016 when Dr. Richard Slaughter passed away after a brief illness. He served at the University of Buffalo before coming to Wayne State 1989 as Chair of Pharmacy Practice. He became Assistant Dean in 2002, and Associate Dean for Pharmacy in 2009. While at the forefront of several
innovations in the pharmacy profession, he was an incomparable educator, servant and friend to all.

3. Recognize individual differences in strengths, interests, and careers in part by implementing a differential workload policy and by workload recognition to maximize scholarly, instructional, and service-related goals.

Department faculty and the Division of Pharmacy Workload Committee implemented the new workload policy in 2013. The policy was used in 2013 and 2014, with the understanding that it was provisional and would be revised. Dr. Dutta took a leadership role in advancing the workload committee activities in 2016.

**Long-Term Goals**

1. Plan for and position the department for increased collaborative research.

   External funding and internal collaboration among PCS faculty increased substantially over the past ten years. For the first time two years ago, three PSC faculty earned two or more large federal awards as PIs. In 2016, this number increased to four. The number of research active laboratories reached a historic high at 15, and all 20 department roster positions were filled. Dr. Wormser retired and was appointed Emeritus Professor, and Dr. Merkel went on a leave of absence. Funding in FY 2016 was $2,745,102 of which $2,345,151 was from NIH. Most grant funding to the college comes from highly competitive NIH investigator-initiated R01 awards and other federal agencies to pharmaceutical sciences faculty. In January, Drs. Serrine Lau and Terry Monks joined the department from the University of Arizona, bringing NIH funding. In May 2016, Dr. Jiemei Wang was recruited into the Louis-Ferdinand faculty line from the WSU Center for Molecular Medicine and genetics. She brought a new 5 year NIH R01 and American Heart Association funding.

The department reinvigorated new research partnerships with KCI, Engineering, Infectious Diseases, iBio and companies. A diabetes working group involves Drs. Kowluru, Yi, Chen, Stemmler, Wang, Lau, and Monks. The department approved a revised Research Enhancement Plan in 2016 to increase the number and ratio of supported GRAs.

Our NIH awards are complemented by funding from the Veterans Administration, American Heart and American Diabetes foundations, and competitive internal research programs supported by Wayne State. A top goal of the department and college is to establish one or more multi-investigator grants. Areas that are existing strengths and poised for national competitiveness include diabetes / obesity / metabolic syndrome, neurosciences, cancer, infection, and drug discovery and design. The pharmacy program has taken several steps to advance this goal.

Our partnership with Pune University was advanced significantly by visits by Drs. Iyer and Stemmler to Pune in 2016 where they participated in teaching and symposia, and visited 8 of the top pharmacy programs to describe opportunities within PSC, to plan future faculty
exchanges, and to identify promising PhD and SURF candidates. A second PhD candidate from Pune was admitted in 2016.

2. Offer excellent foundational training in the pharmaceutical sciences to PharmD students by working with Pharmacy Practice, sharing in the governance and operation of this program, and achieving successful re-accreditation in 2016.

   Our faculty play leadership roles on the PharmD Accreditation Steering Committee and other PharmD committees including chairing the curriculum and co-chairing the admissions committees. The PharmD program was successfully reaccredited in 2016 through 2018 by ACPE. The Department co-hosted a visiting delegation from the Centro Escolar University College of Pharmacy, the Philippines in 2016, with the goal of develop bidirectional teaching and research collaborations.

3. Position programs to earn acclaim within the university, regionally and nationally as world class training programs for high caliber graduate students, postdoctoral fellows, and other trainees.

   The PhD program attracts and graduates excellent scientists. Recent PhD graduates have taken postdoctoral positions in top programs including at Harvard, MIT, the Pennington Institute, and MSU. The number of graduate students doubled over the previous two years is expected increase slightly again next year. Further growth by introducing new MS and BS programs is under consideration. This includes admitting Plan B or Plan C MS candidates. Pharmacy worked with the Registrar to create a mechanism for admitted PharmD students to earn a BS in Health Sciences with a concentration in Pharmaceutical Sciences upon completion of their P1 year and accruing at least 120 credit hours of courses work.

Other Progress:
Communication: Department faculty meetings remain at a frequency of 5-7 per year to cultivate more interaction, deliberation, and collective decision-making. A significant number of Congratulations email are distributed to make department members aware of the successes of their colleagues.

IV. Departmental Faculty and Staff

Faculty

Hanley N. Abramson, Ph.D., Professor
Deepak K. Bhalla, Ph.D., Professor and Interim Dean of the College
Fei Chen, Ph.D., Professor
Randall L. Commissaris, Ph.D., Associate Professor
George B. Corcoran, Ph.D., Professor and Chairman
Aloke K. Dutta, Ph.D., Professor
Steven M. Firestine, Ph.D., Professor
Fusao Hirata, Ph.D., Professor
Arun K. Iyer, Ph.D., Assistant Professor
Anjan Kowluru, Ph.D., Professor and Associate Dean for External Scientific Affairs
Serrine Lau, Ph.D., Professor and Dean of EACPHS
Olivia M. Merkel, Ph.D., Assistant Professor
Terrence Monks, Ph.D., Professor and Assistant Vice President of Integrative Biosciences
Anna B. Moszczyńska, Ph.D., Associate Professor
David K. Pitts, Ph.D., Associate Professor
Philip L. Pokorski, Ph.D., Assistant Professor (Clinical)
Zhihui Qin, Ph.D., Assistant Professor
Duska M. Separovic, Ph.D., Associate Professor (Research)
Timothy L. Stemmler, Ph.D., Professor, Assoc. Chair of PSC, Asst. Dean of the Grad School
Jiemei Wang, Ph.D., Assistant Professor
Zhengping Yi, Ph.D., Professor
Hani Zaher, Ph.D., Part-Time Instructor
Xiangmin Zhang, Ph.D., Assistant Professor (Research)

Adjunct Faculty

Jacob V. Aranda, Adjunct Professor, SUNY Downstate, New York
Hossam Ashour, Adjunct Assistant Professor, Pharmacy Practice
Amit Banerjee, Past Assistant Professor Research
David J.P. Bassett, Adjunct Professor, Family Medicine
Michael R. Bleavins, Adjunct Associate Professor, MI Technology & Research Institute
Kyle Burghardt, Adjunct Assistant Professor, Pharmacy Practice
Christine Davie, Adjunct Assistant Professor, Pharmacy Practice
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, NMS Laboratories, Willow Grove, PA.
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 Associate Professor, Karmanos Cancer Institute
Emily T. Martin, Adjunct Assistant Professor, University of Michigan
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
David M. Thomas, Adjunct Professor, Oakland University William Beaumont School of Medicine
William D. Watt, Adjunct Professor, Occupational and Environmental Health Sciences

Emeritus Faculty
Martin Barr
Raymond J. Dauphinais
Janardan B. Nagwekar
Henry Wormser

Staff
Angela Bumphus, Secretary
Latoya Rice, Administrative Assistant
Dhanashri Pawale, Student Assistant

V. Research Personnel in Training

Pharmaceutical Sciences Ph.D. Candidates

Alsaab, Hashem: Graduate Research Assistant, Advisor Dr. Arun Iyer
Alzhrani, Rami: Graduate Research Assistant, Advisor Dr. Arun Iyer
Alzhrani, Majed: Graduate Research Assistant, Advisor Dr. Zhengping Yi
Bhise, Ketki: Graduate Research Assistant, Advisor Dr Arun. Iyer
Batelu, Sharon: Graduate Research Assistant, Advisor Dr. Timothy Stemmler
Damacharla, Divyasri: Graduate Research Assistant, Advisor Dr. Zhengping Yi and Anjan Kowluru
Elmabruk, Asma: Graduate Research Assistant, Advisor Dr. Aloke Dutta
Killinger, Bryan: Graduate Research Assistant, Advisor Dr. Anna Moszczynska
Lewis, Brianne: Graduate Student, Advisor Dr. Timothy Stemmler
Li, Lingzhi: Graduate Research Assistant, Advisor Dr. Fei Chen
Liao, Yi: Graduate Research Assistant, Advisor Dr. Zhihui Qin
Lin, Qian: Graduate Research Assistant, Advisor Dr. Steven Firestine
Luo, Dan: Graduate Research Assistant, Advisor Dr. Aloke Dutta
Nguyen, Huong: Graduate Research Assistant, Advisor Dr. Terrence Monks
Qi, Yue: Graduate Research Assistant, Advisor Dr. Zhengping Yi
Sarma, Akil: Graduate Research Assistant, Advisor Dr. Anna Moszczynska
Sidarala, Vaibhav: Graduate Research Assistant, Advisor Dr. Anjan Kowluru (Graduated in 2016)
Wadgaonkar, Priya: Graduate Research Assistant, Advisor Dr. Anjan Kowluru
Wu, Kai: Graduate Research Assistant, Advisor Dr. Fei Chen (Graduated in 2016)
Xie, Yuran: Graduate Research Assistant, Advisor Dr. Olivia Merkel
Zhang, Qian: Graduate Research Assistant, Advisor Dr. Fei Chen
Ph.D. Candidates Training with PSC Faculty

**Barupala, Dulmini**: NIH Pre-Doctorial Fellow in the Department of Biochemistry, Advisor Dr. Timothy Stemmler (Defended in 2016)

**Feldmann, Daniel**: Graduate Research Assistant in Cancer Biology, Advisor Dr. Olivia Merkel

**Jones, Steven**: Graduate Research Assistant in Cancer Biology, Advisor Dr. Olivia Merkel

**Kusowski, April**: Graduate Research Assistant in the Department of Biochemistry, Advisor Dr. Timothy Stemmler

**Tremoniti, Annette**: Ph.D. Candidate in Civil and Environmental Engineering, Co-Advisor Dr. David Pitts

**Wang, Wei**: Ph.D. Candidate, Public Health, Joint Training with the Wuhan University, Advisor Dr. Fei Chen

MD / Ph.D. Candidates

**Dzul, Stephen**: NIH Pre-Doctorial Fellow in the Department of Biochemistry, Advisor Dr. Timothy Stemmler (Graduated in 2016)

**Streeter, Cale**: Graduate Research Assistant, Advisor Dr. Steven Firestine

Pharmaceutical Sciences M.S. Candidates

**Alharbi, Majed**: Advisor Dr. Zhengping Yi

**Alla, Lakshmi**: Advisor Dr. David Pitts

**Ashok Kumar, Srinivas**: Advisor Dr. Fei Chen

**Baidwan, Sartaj**: Advisor Dr. Anjan Kowluru

**Gawde, Kaustubh**: Advisor Dr. Arun Iyer

**Li, Ying**: Advisor Dr. Olivia Merkel (Graduated in 2016)

**Luong, Duy**: Advisor Dr. Arun Iyer (Graduated in 2016)

**Monshi, Manahil**: Advisor Dr. David Pitts

**Ou, Siyu**: Advisor Dr. Zhihui Qin

**Patel, Anjali**: Advisor Dr. Timothy Stemmler

**Pawale, Dhanashri**: Advisor Dr. Zhengping Yi

**Ravipati, Pranay**: Advisor Dr. Alok Dutta

**Shah, Nishit**: Advisor Dr. Zhengping Yi (Graduated in 2016)

**Simon, Matthew**: Advisor Dr. Steven Firestine

**Singh, Nivedita**: Advisor Dr. Michael Rybak (Graduated in 2016)

**Sulaiman, Shukurat**: Advisor Dr. Zhengping Yi

**Taneja, Rimzim**: Advisor Dr. Randall Commissaris

**Tatiparti, Katyayani**: Advisor Dr. Arun Iyer

**Wang, Yihan**: Advisor Dr. Jiemei Wang

**Wang, Zhaoxian**: Advisor Dr. Arun Iyer

**Yousef, Shaimaa**: Advisor Dr. Arun Iyer (Graduated in 2016)

**Yu, Dongyue**: Advisor Dr. Anna Moszczynska
M.S. Candidates Training with PSC Faculty

**Hipp, Meridith**: MS Public Health, Department of Family Medicine & Public Health Sciences, Advisor Dr. David Pitts

**Sale, Derek**: BS Education, Michigan Technological University, Advisor Dr. Randall Commissaris

Postdoctoral Scholars

**Caruso, Michael**: Ph.D., Advisor Dr. Zhengping Yi

**Chekuri, Anil**: Ph.D., Advisor Dr. Anjan Kowluru

**Chen, Bailing**: Ph.D., Advisor Dr. Zhihui Qin

**Deshmukh, Rahul**: Ph.D., Advisor Dr. Arun Iyer

**Dinda, Bidyut**: Advisor Dr. Aloke Dutta

**Flack, Amanda**: Ph.D., Advisor Dr. Anna Moszczyńska

**Gemechu, Jickssa**: Ph.D., Advisor Dr. Anna Moszczyńska

**Kersharwani, Prashant**: Ph.D., Advisor Dr. Arun Iyer

**Ma, Danjun**: Ph.D., Advisor Dr. Zhengping Yi

**Mekala, Naveen**: Ph.D., Advisor Dr. Anjan Kowluru

**Poudel, Anil**: Ph.D., Advisor Dr. Anjan Kowluru

**Thakur, Chitra**: Ph.D., Advisor Dr. Fei Chen

**Yedlapudi, Deepthi**: Advisor Dr. Aloke Dutta

Research Assistants / Associates / Scientists

**Das, Banibrata**: Ph.D., Research Associate, Supervisor Dr. Aloke Dutta

**Govindarajan, Barani**: MS, Research Scientist, Supervisor Dr. Olivia Merkel

**Kandegedara, Ashoka**: Ph.D., Research Scientist, Supervisor Dr. Timothy Stemmler

**Lu, Yongju**: MS, Research Assistant, Supervisor Dr. Fei Chen

**Sharma, Shiv**: Ph.D. Research Scientist, Supervisor Dr. Steven Firestine

**Thompson, Lindsey**: BS, Laboratory Director, Supervisor Dr. Timothy Stemmler

**Veluthakal, Rajakrishnan**: Ph.D., Research Scientist, Supervisor Dr. Anjan Kowluru

**Xu, Liping**: Ph.D., Research Technician, Supervisor Dr. Aloke Dutta

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

**Althabte, Anas Jamal**: Advisor Dr. Fei Chen

**Al-Ameen, Rashad**: Advisor, Dr. Randall Commissaris

**Berak, Bradley**: Advisor, Dr. Randall Commissaris

**Bint, Brian**: Advisor, Dr. Randall Commissaris

**Calme, Griffin Robert**: Advisor Dr. Zhengping Yi

**DeLor, Jeremy**: Advisor Dr. Duska Separovic

**Haddad, Justin**: Dr. Arun Iyer

**Hana, Rand**: Dr. Arun Iyer

**Hanna, Andrew**: Dr. Arun Iyer
Ho, Dung: Advisor, Dr. Randall Commissaris
Hu, Alice: Advisor Dr. Zhengping Yi
Isert, Lorenz: German Pharmacy Resident, Advisor Dr. Olivia Merkel
Khalil, Ali: Dr. Arun Iyer
Koka, Arjol: Advisor Dr. David Pitts
Kraetzig Donini, Eduardo: Advisor Dr. David Pitts
Makki, Helena: Advisor, Dr. Randall Commissaris
Matti, Faddy Yousif: Advisor Dr. Fei Chen
Mikhail, Sandra: Advisor Dr. Fei Chen
Nahle, Bilal: Advisor Dr. David Pitts
Odisho, Nicole: Advisor Dr. Zhengping Yi
Pasovic, Amir: Advisor Dr. David Pitts
Patel, Jessica: Advisor Dr. Anna Moszczynska
Pavlik, Lauren: Advisor Dr. Zhengping Yi
Reslan, Ahmad: Advisor Dr. David Pitts
Salameh, Mariam: Advisor Dr. Randall Commissaris
Waldron, Sylvia: Advisor Dr. Anna Moszczynska

SURF (Summer Undergraduate Research Fellow)
Ferger, Kelly: Advisor Dr. Timothy. Stemmler
Reid, Niyla: Advisor Dr. David Pitts
Rhinesmith, Tyler: Advisor Dr. Anna Moszczynska
Santilli, Nicollete: Advisor Dr. Terry Monks
Sorensen, Katie: Advisor Dr. Zhihui Qin
Varghese, Danny: Advisor Dr. Serrine Lau
Wikens, Jenny: Advisor Dr. Arun Iyer
Zhu, Yilin: Advisor Dr. Fei Chen

Undergraduate
Antonczak, Luke: Undergraduate Researcher, Wayne State University, Supervisor Dr. Timothy Stemmler
Belavek, Kayla: Undergraduate Researcher, Advisor Dr. Olivia Merkel
Malone, Ki-Jana: Undergraduate Researcher, Wayne State University, Supervisor Dr. Randall Commissaris
Mohommad, Mohommad B: Undergraduate Researcher, Wayne State University, Supervisor, Dr. Randall Commissaris
Nwamba, Chima: Undergraduate Researcher, Wayne State University, Supervisor Dr. Timothy Stemmler
Parker, Jasmine: Undergraduate Researcher, Wayne State University, Supervisor Dr. David Pitts
Reid, Niyla: Undergraduate Researcher, Wayne State University, Supervisor Dr. David Pitts
Rhinesmith, Tyler: Undergraduate Researcher, Wayne State University, Supervisor Dr. Anna Moszczynska

Intern
Baier, Sabrina: German Pharmacy Summer Intern, Advisor Dr. Olivia Merkel
**Gerpheide, Anna-Lena:** German Pharmacy Summer Intern, Advisor Dr. Olivia Merkel  
**Nofar, Thomas:** Intern, Advisor Dr. Fei Chen  
**Zimmermann, Christoph:** German Pharmacy Summer Intern, Advisor Dr. Olivia Merkel

**Volunteer**  
**Denton, Sara:** Volunteer, Supervisor Dr. Anna Moszczynska  
**Hauseman, Andrea:** Volunteer, Supervisor Dr. Anna Moszczynska  
**Wang, Shu:** BS, Volunteer, Advisor Dr. Olivia Merkel

**Other Researchers**  
**Ahmed, Aisha:** Port Huron Norther High School, Supervisor Dr. David Pitts  
**Ammar, Amina:** Research Assistant, University of Michigan Dearborn, Supervisor Dr. Randall Commissaris  
**Banchette, Ashley:** Student Research Assistant, WSU Honors College, Supervisor Dr. Randall Commissaris  
**Sitto, Brenda:** Supervisor Dr. Zhengping Yi  
**Willis, Rebecca:** Supervisor Dr. Zhengping Yi

### VI. Graduate Degrees Conferred in 2016

**PhD Conferred**

**Dr. Dulmini Barupala:**  
Advisor: Dr. Timothy Stemmler  
Thesis Title: Characterization of the Yeast Cysteine Desulfurase Complex within Mitochondrial Fe-S Cluster Biogenesis.  
Current: Director Med-Direct Program, Wayne State University, Detroit, MI

**Dr. Stephen Dzul:**  
Advisor: Dr. Timothy Stemmler  
Thesis Title: Insights into *De Novo* Fe-S Cluster Biogenesis via the *Eukaryotic* Fe-S Cluster Pathway (ISC) *In Vitro*.  
Current: Third Year Medical Student at WSU in the MD/PhD Program

**Dr. Vaibhav Sidarala:**  
Advisor: Dr. Anjan Kowluru  
Thesis Title: Mechanisms of pancreatic beta cell dysfunction in diabetes.  
Current: Post-Doctoral Fellow, Diabetes Center, University of Michigan, Ann Arbor, MI

**Dr. Kai Wu:**  
Advisor: Dr. Fei Chen  
Thesis Title: Exploration of cancer proliferative signaling in chemotherapy drug resistance and mdig-induced tumorigenesis.  
Current: Postdoctoral Fellow, University of Michigan, Ann Arbor, MI
**MS Conferred**

**Ying Li:**
Advisor: Dr. Olivia Merkel
Thesis Title: Folate receptor targeted three-layered micelles and hydrogels for gene delivery to activated macrophages.
Current: 

**Duy Luong:**
Advisor: Dr. Arun Iyer
Thesis Title: Denrimer-coated iron oxide theranostic nanoparticles for cancer imaging and therapy.
Current: Volunteer Research Assistant in U-BiND Systems Lab; Will be joining University of Michigan, Ann Arbor, MI for PhD in Fall 2017

**Siyu Ou:**
Advisor: Dr. Zhihui Qin
Thesis Title: Design and synthesis of enzalutamide-isothiocyanate hybrid drug as anti-prostate cancer agents.
Current: Research Assistant in Dr. Zhihui Qin's lab, Department of Pharmaceutical Sciences, WSU, MI.

**Nivedita Singh:**
Advisor: Dr. Michael Rybak
Thesis Title: Impact of cefazolin co-administration with vancomycin to reduce development of vancomycin intermediate staphylococcus aureus.
Current: Research Assistant, Anti-Infective Research Laboratory, Department of Pharmacy Practice, WSU

**Shaimaa Yousef:**
Advisor: Dr. Arun Iyer
Thesis Title: Targeted delivery of Nrf2 siRNA using modular polymeric micellar nanodelivery system for efficient target gene knockdown in hepatocellular carcinoma.
Current: Research and Teaching Assistant, Faculty of Pharmacy, Cairo University, Egypt.

**VII. Honors and Awards**

**University**

**Dutta, Aloke:** Outstanding Graduate Mentor, Wayne State University.
**Firestine, Steven:** Faculty Recognition Award in Pharmaceutical Sciences, Wayne State University
College

Zaher, Hani: Teacher of the Year award, WSU College of Pharmacy 2016.
Pitts, David: Professor of the Year award, WSU College of Pharmacy, Class of 2018.

VIII. Professional, Scientific and Other Leadership

External to University

Corcoran, George: Workshop Organizer and Chair, Cannabis in the Courtroom, 55th Annual Meeting of the Society of Toxicology, New Orleans, LA
Corcoran, George: Member, National Toxicology Program Board of Scientific Counselors
Corcoran, George: Board Member Representative, National Toxicology Program Report on Carcinogens: Cobalt
Iyer, Arun: Member, Molecular Therapeutics Program, Karmanos Cancer Institute, WSU School of Medicine.
Iyer, Arun: Member, WSU-Pune University, Research Collaboration and Student Review Panel.
Iyer, Arun: Member, PhD Thesis committee, NIRMA University, Ahmedabad, India.
Kowluru, Anjan: Member, Selection Committee for SFRBM 2016 Lifetime Achievement Awards
Kowluru, Anjan: Member, Selection Committee for SFRBM 2016 Fellows Selection Committee
Lau, Serrine: Member, Executive Committee, HESI
Lau, Serrine: Treasurer, HESI.
Lau, Serrine: Toxicology Forum Program Planning Committee
Lau, Serrine: Chair, Symposium “Fortuitous Protein Modification in Disease Pathogenesis and Treatment”, Division of Toxicology, ASPET, San Diego April 5, 2016.
Lau, Serrine: Member, International Life Sciences Institute (ILSI) Board of Trustees.
Lau, Serrine: Vice-President, Board of Trustees, HESI.
Monks, Terrence: Professor and Chair, Department of Pharmacology and Toxicology, College of Pharmacy, University of Arizona Health Sciences Center, Tucson, AZ.
Monks, Terrence: Director, ROS and Disease Prevention Research Core, Southwest Environmental Health Sciences Center.
Monks, Terrence: Associate Dean for Research & Graduate Studies, College of Pharmacy, University of Arizona Health Sciences Center, Tucson, AZ.
Monks, Terrence: Chairman, Special Emphasis Panel (ZRG1 DKUS C 54) evaluating RO1 & R21 applications responding to PAR-14-203/204 “Environmental Contributors to Autism Spectrum Disorders”

Internal (External to College)

Bhalla, Deepak: Joint appointments in Karmanos Cancer Institute, Wayne State University, Detroit, MI
Commissaris, Randall: Associate Professor, Psychiatry and Behavioral Neurosciences (Adjunct), School of Medicine, Wayne State University.

Corcoran, George: Co-Chair, WSU Chairs and Directors Development Committee.

Corcoran, George: Member, Technology Transfer and Commercialization Review Committee

Corcoran, George: Member, OVPR Research Enhancement Program Review Panel

Corcoran, George: Member, Postdoctoral Office Advisory Board

Corcoran, George: Academic Departments and Programs Review Committee

Corcoran, George: Chairs and Directors: Higher Learning Commission Accreditation / Educational Assessment (Co-Organizer)

Corcoran, George: Chairs and Directors: Performance Evaluation (Co-Organizer)

Corcoran, George: Chairs and Directors: Team Scholarship (Co-Organizer)

Hirata, Fusao: Chair, WSU Radiation Safety and Radioisotope Committee.

Hirata, Fusao: Member, University Fellowship Review Committee

Kowluru, Anjan: Adjunct Professor, Institute for Environmental Health Sciences [IEHS]

Kowluru, Anjan: Professor of Internal Medicine, Division of Endocrinology and Metabolism, Wayne State School of Medicine.

Kowluru, Anjan: Member, Diabetes and Obesity Team Science [DOTS] Program

Kowluru, Anjan: Acting ACOS-Research and Development, JDD VA Medical Center

Kowluru, Anjan: Research Integrity Officer, JDD VA Medical Center

Kowluru, Anjan: Secretary/Treasurer [acting], Metropolitan Detroit Research and Education Foundation [MDREF], John D. Dingell VA Medical Center, Detroit

Kowluru, Anjan: Deputy ACOS-Research

Kowluru, Anjan: Member, Outstanding Graduate Mentor Award and the Distinguished Graduate Faculty Award Selection Committee, Graduate School, Wayne State University

Kowluru, Anjan: Judge, Graduate and Post-Doctoral Research Symposium, Wayne State University

Pitts, David: Co-Director, Urban Watershed Environmental Research Group (UWERG).

Pitts, David: Member, Healthy Urban Waters (HUW) Advisory Board

Stemmler, Timothy: Brookhaven National Laboratory/Case Western Reserve P30 Advisory Committee

Stemmler, Timothy: Faculty Mentoring Committee, Department of Chemistry, College of Charleston, Charleston, SC

Stemmler, Timothy: Asst. Dean of Grad School, Assoc. Dir of Postdoctoral Studies

Stemmler, Timothy: Director, WSU Graduate Admissions Director Search Committee.

IX. Scientific Review Panels

Bhalla, Deepak: Member, National Research Council Committee on Toxicology

Chen, Fei: External Assessor of Research Grants Council of Hong Kong

Chen, Fei: Reviewer, the Israel Science Foundation

Chen, Fei: Reviewer, National Medical Research Council of Singapore
Chen, Fei: Reviewer, Italian Ministry of Health in association with NIH
Chen, Fei: Member, Data and Safety Monitoring Board, School of Medicine, Wayne State University
Chen, Fei: Ad hoc, NIH Cancer Genetics Study Section
Commissaris, Randall: Member Addiction Research Institute of Michigan.
Commissaris, Randall: American Society for Pharmacology and Therapeutics (ASPET)
Dutta, Alok: Ad hoc reviewer of DDNS “Drug Discovery for the Nervous System”
Dutta, Alok: Ad hoc reviewer Molecular Probes, ZRG1 MDCN-C (58)
Firestine, Steven: Grant Reviewer, National Institutes of Health, ZRG1 IDM-X(10)B.
Hirata, Fusao: Member, National Foundation of Sciences (USA) Scientific Council.
Hirata, Fusao: Member, Neurological Sciences, NIH Study Section 1988
Hirata, Fusao: Member, Veterans Administration, Medical Sciences
Iyer, Arun: Grant Reviewer, KCI Small Molecule Drug Discovery and Development, Karmanos Cancer Institute, Detroit, MI
Iyer, Arun: Reviewer, EACPHS Annual Research Forum, Wayne State University, Detroit, MI
Iyer, Arun: Grant Reviewer, Faculty Research Awards Program (FRAP), EACPHS, Wayne State University, Detroit, MI
Iyer, Arun: Grant Reviewer, National Science Centre in Poland, Government of Poland, Karakov, Poland.
Iyer, Arun: Member, American Association of Pharmaceutical Scientists (AAPS)
Iyer, Arun: Member, American Chemical Society (ACS)
Iyer, Arun: Member, American Association of Colleges of Pharmacy (AACP)
Iyer, Arun: Member, Society of Nuclear Medicine (SNM)
Iyer, Arun: Member, The Controlled Release Society (CRS)
Iyer, Arun: Member, Japanese Society of Drug Delivery System (DDS)
Iyer, Arun: Member, Society of Polymer Science, Japan (SPSJ)
Iyer, Arun: Member, Society of Polymer Science, India (SPSI)
Iyer, Arun: Member, Society of Molecular Imprinting, Sweden (SMI)
Kowluru, Anjan: Member, Center for Urban Resources to Environmental Stressors [CURES], Wayne State University
Kowluru, Anjan: Member, Advisory Committee for the Annual Research Day Symposium on “Precision translational medicine for improving veteran’s health care” held at Harry S. Truman Veterans Hospital, Columbia in May, 2016
Kowluru, Anjan: Voting Member, Detroit Research and Development Committee
Kowluru, Anjan: Voting Member, Subcommittee on Research Safety
Kowluru, Anjan: Voting Member, Institutional Biosafety Committee
Kowluru, Anjan: Member, Scientist Promotion Review Panel
Kowluru, Anjan: Recognized Reviewer, Biochemical Pharmacology
Kowluru, Anjan: Member, Department of VA VISN 11 Research Council [Detroit, Ann Arbor and Indianapolis VA Medical Centers]
Kowluru, Anjan: Board Member, Metropolitan Detroit Research and Education Foundation [MDREF], John D. Dingell VA Medical Center, Detroit
Merkel, Olivia: Reviewer, National Institutes of Health Innovative Research in Cancer Nanotechnology (IRCN).
Merkel, Olivia: Reviewer, Oak Ridge Associated Universities (ORAU), NASA Postdoctoral Program (NPP).
Merkel, Olivia: Reviewer, Oak Ridge Associated Universities (ORAU), Pennsylvania Department of Health (PADOH).
Merkel, Olivia: Reviewer, Kentucky Science & Engineering Foundation.
Moszczynska, Anna: Grant application reviewer, National Institutes of Health (NIH):
  Neurobiology of Motivated Behavior (NMB) Study Section.
Moszczynska, Anna: Ad hoc grant application reviewer, National Institutes of Health (NIH):
  K99/R01 Pathway to Independence Award panel.
Moszczynska, Anna: Ad hoc grant application reviewer, Belgian Research Foundation Flanders (FWO).
Moszczynska, Anna: Ad hoc grant application reviewer for the Czech Science Foundation
Stemmler, Timothy: Grant Reviewer, French National Research Agency (ANR)
Stemmler, Timothy: Grant Reviewer, German Research Foundation (DFG)
Stemmler, Timothy: Grant Reviewer, NIH – ZRG1 BCMB-D (02)M Special Emphasis Panel
Stemmler, Timothy: Grant Reviewer, NSF – Biomolecules Study Section (Ad Hoc).
Stemmler, Timothy: Grant Reviewer, Friedreich’s Ataxia Research Alliance (Ad Hoc).
Stemmler, Timothy: Grant Reviewer, Reviewer, Petroleum Research Fund (Ad Hoc).
Stemmler, Timothy: Grant Reviewer, Stanford Synchrotron Radiation Laboratory.
Yi, Zhengping: Member, American Diabetes Association’s Research Grant Review Committee.
Yi, Zhengping: Member, NIH/NIDDK, Clinical and integrative Diabetes and Obesity (CIDO) Study Section.

**X. Editorial Boards**

Bhalla, Deepak: Editorial Board Member, Journal of Toxicology and Environmental Health
Bhalla, Deepak: Associate Editor, Inhalation Toxicology
Chen, Fei: Senior Editorial Board Member, American Journal of Cancer Research.
Chen, Fei: Editorial Board Member, Journal of Cancer Therapeutics and Research.
Chen, Fei: Editorial board member, Occupational Diseases and Environmental Medicine.
Chen, Fei: Editorial board member, Journal of Hepatocellular Carcinoma.
Chen, Fei: Editorial Board Member, Annals of Cancer Research.
Chen, Fei: Editorial Board Member, Toxicology and Applied Pharmacology.
Corcoran, George: Editor, MO Journal Toxicology.
Corcoran, George: Associate Editor, Toxicology and Applied Pharmacology.
Corcoran, George: Guest Editor, Toxicology and Applied Pharmacology
Dutta, Alok: Honorary Editorial Board Member, Research and Reports in Medicinal Chemistry.
Dutta, Alok: Editorial Board Member, Current Medicinal Chemistry-Central Nervous System.
Dutta, Alok: Editorial Board Member, The Open Bioactive Compounds Journal.
Dutta, Alok: Editorial Board Member, Pharmaceutics.
Dutta, Alok: Editorial Board Member, Neurotransmitter.
Firestine, Steven: Editorial Board Member, ACS Combinatorial Science.
Hirata, Fusao: Editorial Board Member, DNA and Biology.
Hirata, Fusao: Editorial Board Member, Journal of System Biology.
Hirata, Fusao: Editorial Board Member, International Journal of Clinical Pharmacology and Toxicology.
Hirata, Fusao: Editorial Board Member, SOJ Pharmacy & Pharmaceutical Sciences.
Hirata, Fusao: Editorial Board Member, Versita in Medicine, Pharmacy and Public Health.
Hirata, Fusao: Editorial Board Member, Austin Journal of Pharmacology and Therapeutics.
Hirata, Fusao: Editorial Board Member, J. Pharmacology Toxicology Research.
Iyer, Arun: Editorial Board Member, The Scientific Pages of Nanotechnology.
Kowluru, Anjan: Editorial Board Member, Recent Patents on Endocrine, Metabolic and Immune Drug Discovery.
Kowluru, Anjan: Editorial Board Member, Biochemical Pharmacology.
Kowluru, Anjan: Editorial Board Member, Metabolic & Functional Research on Diabetes.
Kowluru, Anjan: Editorial Board Member, Islets.
Kowluru, Anjan: Editorial Board Member, JOP- Journal of Pancreas.
Kowluru, Anjan: Editorial Board Member, Journal of Membrane Science and Technology.
Kowluru, Anjan: Editorial Board Member, Journal of Diabetes and Metabolism.
Kowluru, Anjan: Editorial Board Member, OA Diabetes [London].
Kowluru, Anjan: Review Editor, Frontiers in Diabetes.
Kowluru, Anjan: Regional Editor, Recent Patents on Endocrine, Metabolic and Immune Drug Discovery.
Merkel, Olivia: Editorial Board Member, Drug Delivery Letters.
Merkel, Olivia: Editorial Board Member, European Journal of Pharmaceutics and Biopharmaceutics.
Monks, Terrence: Editorial Board Member, Chemical-Biological Interactions.
Monks, Terrence: Associate Editor - Toxicology & Applied Pharmacology.
Moszczynska, Anna: Editorial board member, Scientific Reports (Nature Publishing Group)
Yi, Zhengping: Editorial Board Member, Journal of Data Mining in Genomics & Proteomics.
Yi, Zhengping: Editorial Board Member, International Journal of Clinical Pharmacology and Toxicology.

XI. Grants Awarded (Summarized in Table 1)

Federal

Chen, Fei: NIH R01 ES020137 Titled “MicroRNA-190 and Oxidative Stress in Arsenic Carcinogenesis”

Chen, Fei (Kowluru Co-I): NIH RO1DK110314 Titled “Proinsulin ER Export and Beta-Cell Homeostasis in Diabetes”

Chen, Fei (Kowluru Co-I): NIH R56DK102039 Titled “Proinsulin ER Export and Beta-Cell Homeostasis in Diabetes”

Kowluru, Anjan: Department of VA MERIT Review 101BX00281 Titled “Novel Regulators of Islet Beta-Cell Function in Health and Diabetes”.

Kowluru, Anjan: Department of VA Senior Research Career Scientist Award 13S-RCS-006

Kowluru, Anjan: NIH RO1EY022230 titled “NADPH Oxidase, Mitochondrial Dysfunction and Diabetic Retinopathy”.

Kowluru, Anjan: NIH RO1EY022230 [supplemental award] titled “NADPH Oxidase, Mitochondrial Dysfunction and Diabetic Retinopathy”.

Kowluru, Anjan: Shared Equipment [ShEEP] Award from VA to purchaseVevo 3100 Ultrasound instrument.

Kowluru, Anjan: VA Merit Award [101BX002019] Titled “Diabetes: ERK5 and Vascular Inflammation”

Moszczynska, Anna: NIH R01DA034783 Titled “Proteasome and Parkin as Drug Targets Against Methamphetamine Toxicity”

Pitts, David: NSF-FSML 1624761, Co-PI, “HEART Field Station Improvements for Urban Watershed Research and Education”

Pitts, David: NIH R21- ES027199, Co-PI, Project Titled: “Rapid response to contaminants in Flint drinking water”

Stemmler, Timothy: NIH R01 GM107542 Titled “Mitochondria Cytoplasim Interaction for Cytosolic Fe-S Cluster Assembly”

Stemmler, Timothy: NIH R01 DK068139 Titled “Structural Insights into the Function of Frataxin”

Stemmler, Timothy: NIH F30 DK101230 Titled “Characterizing Isu Scaffolding Protein and ISC Multiprotein Complex Structure and Function In Vitro”

Wang, Jiemei: NIH DK109036 Titled “Role of Inositol requiring enzyme 1 in regulating angiogenesis for diabetic wound repair”

Yi, Zhengping (Kowluru Co-I): NIH R01DK081750 Titled “Human Skeletal Muscle Proteome and Phosphoproteome in Obesity and Type 2 Diabetes”
Yi, Zhengping (Kowluru Co-I): NIH R01DK107666 Titled “Serine/threonine Protein Phosphatase 1 in Insulin resistance and Type 2 Diabetes”

Foundation
Wang, Jiemei: American Heart Association 13SDG16930098 Titled “MicroRNA regulation of endothelial progenitor cell apoptosis in diabetic wound healing”
Yi, Zhengping: American Diabetes Association 300385387 Titled “Protection against insulin resistance in obesity”
Zhang, Xiangmin: MDRC Titled “Recombinant attenuated bacteria as drug to initiate insulin synthesis in vivo”

University/College
Firestine, Steve: University of Las Vegas Titled “Prophylaxis of Clostridium difficile infection”

Table 1: PSC Grant Detailed Information (*Total Award)

<table>
<thead>
<tr>
<th>PSC Faculty</th>
<th>Sponsor</th>
<th>Grant Title</th>
<th>Start Date</th>
<th>End Date</th>
<th>Project Amount*</th>
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</thead>
<tbody>
<tr>
<td>Chen, Fei</td>
<td>NIH</td>
<td>MicroRNA-190 and Oxidative Stress in Arsenic Carcinogenesis</td>
<td>9/1/12</td>
<td>5/31/17</td>
<td>$2,048,592</td>
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<td>Chen, Fei</td>
<td>NIH</td>
<td>Proinsulin ER Export and Beta-Cell Homeostasis in Diabetes</td>
<td>9/1/16</td>
<td>8/31/21</td>
<td>$1,746,357</td>
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<tr>
<td>Chen, Fei</td>
<td>NIH</td>
<td>Proinsulin ER Export and Beta-Cell Homeostasis in Diabetes</td>
<td>9/15/15</td>
<td>8/31/16</td>
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<tr>
<td>Dutta, Aloke</td>
<td>NYU</td>
<td>Biogenic Amine Transporters: Mechanisms of Ligand Interactions</td>
<td>4/1/16</td>
<td>3/31/17</td>
<td>$20,000</td>
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<td>Firestine, Steve</td>
<td>UNLV</td>
<td>Prophylaxis of Clostridium difficile infection</td>
<td>12/1/14</td>
<td>11/30/19</td>
<td>$1,308,864</td>
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<td>Kowluru Anjan</td>
<td>VA</td>
<td>Novel Regulators of Islet Beta-Cell Function in Health and Diabetes</td>
<td>7/1/15</td>
<td>6/30/19</td>
<td>$650,000</td>
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<td>Kowluru Anjan</td>
<td>VA</td>
<td>Senior Research Career Scientist Award</td>
<td>9/1/13</td>
<td>8/31/20</td>
<td>$1,320,000</td>
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<td>Kowluru Anjan</td>
<td>NIH</td>
<td>NADP Oxidase, Mitochondrial Dysfunction and Diabetic Retinopathy</td>
<td>4/1/12</td>
<td>3/31/18</td>
<td>$1,520,000</td>
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<tr>
<td>Name</td>
<td>Institution</td>
<td>Project Title</td>
<td>Start Date</td>
<td>End Date</td>
<td>Amount</td>
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<tr>
<td>Kowluru Anjan</td>
<td>NIH</td>
<td>NADP Oxidase, Mitochondrial Dysfunction and Diabetic Retinopathy [Administrative Supplement]</td>
<td>4/1/12</td>
<td>3/31/18</td>
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<td>Kowluru Anjan [Co-I]</td>
<td>VA-Merit</td>
<td>Diabetes:ERK5 and Vascular Inflammation</td>
<td>10/1/14</td>
<td>9/30/18</td>
<td>$1,113,000</td>
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<tr>
<td>Kowluru Anjan [Co-I]</td>
<td>VA-ShEEP</td>
<td>Vevo 3100 Ultrasound Instrument</td>
<td>2016</td>
<td>Not applicable</td>
<td>$556,000</td>
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<td>Moszczynska, Anna</td>
<td>NIH</td>
<td>Proteasome and Parkin as Drug Targets Against Methamphetamine Toxicity</td>
<td>9/15/13</td>
<td>5/31/18</td>
<td>$2,029,580</td>
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<td>Pitts, David</td>
<td>NIH</td>
<td>Rapid response to contaminants in Flint drinking water</td>
<td>4/1/16</td>
<td>3/31/18</td>
<td>$422,110</td>
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<td>Pitts, David</td>
<td>NSF</td>
<td>HEART Field Station Improvements for Urban Watershed Research and Education</td>
<td>8/1/16</td>
<td>1/31/18</td>
<td>$251,996</td>
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<tr>
<td>Stemmler, Timothy</td>
<td>NIH</td>
<td>Structural Insights into the Function of Frataxin</td>
<td>8/1/11</td>
<td>7/31/16</td>
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<td>Stemmler, Timothy</td>
<td>NIH</td>
<td>Mitochondria Cytoplasm Interaction for Cytosolic Fe-S Cluster Assembly</td>
<td>7/1/14</td>
<td>4/30/17</td>
<td>$79,637</td>
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<td>Stemmler, Timothy</td>
<td>NIH</td>
<td>Characterizing Isu Scaffolding Protein and ISC Complex Structure and Function In Vitro</td>
<td>8/1/14</td>
<td>7/31/19</td>
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<td>Wang, Jiemei</td>
<td>NIH</td>
<td>Role of Inositol requiring enzyme 1 in regulating angiogenesis for diabetic wound repair</td>
<td>3/1/16</td>
<td>2/28/21</td>
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<td>Wang, Jiemei</td>
<td>AHA</td>
<td>MicroRNA regulation of endothelial progenitor cell apoptosis in diabetic wound healing</td>
<td>7/1/13</td>
<td>6/30/17</td>
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<tr>
<td>Yi, Zhengping</td>
<td>NIH</td>
<td>Serine/threonine Protein Phosphatase 1 in Insulin resistance and Type 2 Diabetes</td>
<td>9/25/15</td>
<td>8/31/20</td>
<td>$2,583,325</td>
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<tr>
<td>Yi, Zhengping</td>
<td>NIH</td>
<td>Human Skeletal Muscle Proteome and Phosphoproteome in Obesity and Type 2 Diabetes</td>
<td>8/1/14</td>
<td>4/30/18</td>
<td>$1,349,133</td>
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<td>Yi, Zhengping</td>
<td>ADA</td>
<td>Protection against insulin resistance in obesity</td>
<td>1/1/16</td>
<td>12/31/18</td>
<td>$148,158</td>
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<tr>
<td>Zhang, Xiamging</td>
<td>NIH</td>
<td>Recombinant attenuated bacteria as drug to initiate insulin synthesis in vivo</td>
<td>12/1/16</td>
<td>11/30/17</td>
<td>$36,000</td>
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</table>

XII. Invited Presentations

Chen, Fei: “Mdig and cancer, 20 years of mining and digging.” Department of Biomedical Sciences, City University of Hong Kong

Chen, Fei: “Metabolic reprogramming of the arsenic-induced cancer stem cells.” 9th Metal Toxicology & Carcinogenesis, Lexington, Kentucky

Corcoran, George: “Cannabis in the Courtroom.” Itinerary Planner, 55th Annual Meeting of the Society of Toxicology, New Orleans, LA

Dutta, Alok: “Implication of multifunctional d3 preferring agonists as therapeutic agents in Parkinson’s disease”, 33rd Camerino-Cyprus Symposium, Camerino, Italy


Iyer, Arun: “Graduate Studies and Higher Education Opportunities in the United States and WSU.” Sinhgad college of Pharmacy, University of Pune, Pune, India.

Iyer, Arun: “Graduate Studies and Higher Education Opportunities in the United States and WSU.” Allana College of Pharmacy, University of Pune, Pune, India.

Merkel, Olivia: “Smart dosage forms for siRNA delivery as therapy of inflammatory diseases.” Department of Clinical Pharmacy, Medical University of Vienna

Merkel, Olivia: “Smart dosage forms for targeted siRNA delivery.” Boehringer-Ingelheim, Biberach,

Merkel, Olivia: “Smart dosage forms for targeted siRNA delivery.” Nanosystems Initiative Munich, Munich

Merkel, Olivia: “New Approaches in Current Asthma Therapy.” German Pharmaceutical Society (DPhG), LMU Munich

Merkel, Olivia: “In-situ forming gel devices as local depot therapeutic for Rheumatoid Arthritis.” 14th European Symposium on Controlled Drug Delivery, Egmond aan Zee, The Netherlands

Merkel, Olivia: “Targeted nanoparticles for siRNA delivery” Winter School, Nanosystems Initiative Munich

Merkel, Olivia: “Smart dosage forms for siRNA delivery as therapy of inflammatory diseases.” Department of Biochemistry, WSU

Moszczynska, Anna: 9th Symposium on Neuroprotection and Neurorepair. Leipzig, Germany
Stemmler, Timothy: “Monitoring Biomolecules that Direct Mitochondrial Fe Homeostasis.”
Department of Chemistry, University of Michigan, Ann Arbor, MI

Stemmler, Timothy: “Molecular Factors that Drive Mitochondrial Fe-S Cluster Biosynthesis.”
3rd International Conference on Herbal and Synthetic Drug Studies, Pune, India

Stemmler, Timothy: “Molecular factors that drive mitochondrial Fe-S cluster biosynthesis.”
Metals in Biology Gordon Conference, Ventura, CA

Stemmler, Timothy: “Molecular factors that drive mitochondrial Fe-S cluster biosynthesis.”
Chemistry Department, Wayne State University, Detroit, MI

Stemmler, Timothy: “Fe-S Clusters in Gene Regulation.” American Chemical Society National Meeting, San Diego, CA

Stemmler, Timothy: “Molecular factors that drive mitochondrial Fe-S cluster biosynthesis.”
American Chemical Society National Meeting, San Diego, CA

Stemmler, Timothy: “Molecular factors that drive mitochondrial Fe-S cluster biosynthesis.”
FASEB Meeting, Big Sky, MT

Stemmler, Timothy: “Molecular factors that drive mitochondrial Fe-S cluster biosynthesis.”
Chemistry Department, Nanjing University, China

Stemmler, Timothy: “Molecular factors that drive mitochondrial Fe-S cluster biosynthesis.”
Chemistry Department, Institute for Environmental Science, Chinese National Academy, Xiamen, China

XIII. Journal Publications


Movassaghian, S., Hildebrandt, C., Xie, Y., Li, Y., Rosati, R., Yang, Z., Merkel, OM.*: Post-transcriptional regulation of the GASC1 oncogene with active tumor-targeted siRNA nanoparticles Molecular Pharmaceutics, 13 (8), 2605-21, DOI: 10.1021/acs.molpharmaceut.5b00948, *Corresponding Author, 2016.


Jones, S., Lizzio, V., Merkel, OM.*: Folate Receptor Targeted Delivery of siRNA and Paclitaxel to Ovarian Cancer Cells via Folate Conjugated Triblock Co-polymer to Overcome TLR4 Driven Chemotherapy Resistance Biomacromolecules, 17 (1), 76-87 *Corresponding Author, DOI: 10.1021/acs.biomac.5b01189, 2016.


Luong D, Kesharwani P, Killinger BA*, Moszczynska A, Sarkar FH, Padhye S, Rishi AK, Iyer AK. Solubility enhancement and targeted delivery of a potent anticancer flavonoid analogue to


XIV. Book Chapters and Books


Jones, SK., Merkel, OM.*: Indium-labeling of siRNA for small animal SPECT imaging, Methods Mol Biol. 2016, 1372, 79-88. *Corresponding Author


XV. Patents Issued or Pending


Iyer, AK., An off the shelf method to prepare well protected siRNA nanoplexes using novel 'clickable' polymers and their targeted delivery to diseased sites for effective gene delivery." Tech ID 16-1360 Invention Disclosure filed under Wayne State University. July 2016.

Qin, Z., Ratnam, M., Anticancer drugs including the chemical structures of an androgen receptor ligand and a histone deacetylase inhibitor; Provisional submission, U.S. patent 62/288,810, submitted by WSU in January 2016.
XVI. Abstracts


Luong, D., Kesharwani, P., **Iyer, AK.** Dendrimer-Coated Iron Oxide Theranostic Nanoparticles for Cancer Imaging and Therapy. Cancer Metabolism Symposium, University of Michigan, Ann Arbor, MI, 2016.


Kashaw, SK., Agrawal, S. and **Iyer, AK.** Development of in-silico QSAR models of 1,2,4 Oxadiazole derivatives as potential apoptosis inducer and anticancer agents. The 13th Annual EACPHS Research Forum, October 2016.


**Monks, T.J.,** Cholanians, A.B., Lizarraga, L.L., Phan A.V. and **Lau, S.S.** Concurrent inhibition of vesicular monoamine transporter 2 does not protect against 3,4-methylenedioxyamphetamine (MDMA; Ecstasy) induced neurotoxicity. Toxicologist, 150: 57, 2016.


Le, G.T., Canatsey, R.D., Tran, K., Monks, T.J. and Lau, S.S. Pentoxifylline modulates the AKT/mTOR/AMPK pathway: potential role as an adjunct in cancer chemotherapy. The FASEB Journal, 30: 633.9, 2016.
Mehta, A., Stathopoulos, GT., Merkel, OM.: Inhalable Nanoparticles for In Vivo Genome Editing Mediated by CRISPR-CAS9 Delivery for Undruggable KRAS Driven Lung Cancers.
McElmurry, S.P., Zahran, S., Pitts, D.K., Sperone, F.G.: Triazines in surface and groundwater enhance risk of congenital birth defects Fifth International Conference on Emerging Contaminants (EmCon2016) and Micropollutants (WiOW2016), University of Technology, Sydney, Australia, 2016.

XVII. Departmental Seminars

Winter 2016

January 13: Approach towards the development of symptomatic and disease modifying therapeutics for Parkinson’s disease. Dan Luo, Year 3 PhD Student Seminar
January 20: Design, synthesis and antimicrobial activity of N5-CAIR synthetase inhibitors. Qian Lin, Year 3 PhD Student Seminar
January 27: Global Kinome Interactome in human skeletal muscle from lean and obese participants. Yue Qi, Year 3 PhD Student Seminar
February 3: Investigating the mechanism of Isatin inhibition of the microbial enzyme N5-CAIR Synthetase. Cale Streeter, Year 3 PhD Student Seminar
February 10: Unveiling the underlying mechanisms of arsenic induced tumorigenesis: from the view of epigenetics and metastasis. Lingzhi Li, Year 3 PhD Student Seminar
February 17: Targeted delivery of siRNA to activated T cells via Transferrin-Polyethyleneimine (Tf-PEI) as a potential therapy of asthma. Yuran Xie, Year 3 PhD Student Seminar
February 24: Mechanisms of pancreatic beta-cell dysfunction in diabetes. Vaibhav Sidara, Year 3 PhD Student Seminar
March 2: Adventures in antimicrobial drug discovery. Dr. Steven Firestine, Associate Professor, Department of Pharmaceutical Sciences, Wayne State University; University
March 9: Advancing lipid gene discoveries to innovative targets for CVD. Dr. Eugene Chen, Frederick Huetwell Professor of Cardiovascular Medicine, University of Michigan Medical Center

March 16: Natural products and nanomedicine to eliminate cancer stem cells. Dr. Duxin Sun, Department of Pharmaceutical Sciences, University of Michigan

March 23: Serving the best interests of our students, our teaching programs, and the future faculty, all in one fell swoop. Dr. Brian Coppola, Department of Chemistry, University of Michigan

March 30: Phenotypic and serotonergic targets for therapeutics in addictive disorders. Dr. Kathryn Cunningham, Department of Pharmacology and Toxicology, University of Texas Medical Branch, Galveston, TX

April 6: Oxidative Damage and Environmental Carcinogenesis. Dr. Tom Hei, Center for Radiological Research, Columbia University

April 12: Approaches for localized delivery to solid tumors. Dr. Hamid Ghandehari, Departments of Pharmaceutics & Pharmaceutical Chemistry, and Bioengineering, University of Utah

April 13: Insights on DNA repair enzymes from computational simulations. Dr. C. Andres Cisneros, Department of Chemistry, Wayne State University

Fall 2016

September 7: New Hsp90 Inhibitors from Old Drugs Dr. Brian Blagg, Professor of Medicinal Chemistry, University of Kansas, Lawrence, Kansas

September 14: Challenges for the Toxicologist in the Courtroom: the 5 Question Approach to Specific Causation Dr. Sol Bobst, Senior Regulatory Compliance & Toxicology Advisor, NEXEO Solutions, The Woodlands, TX

September 21: Frataxin, mitochondrial energetics and heart failure. Dr. Rajesh Amin, Assistant Professor of Drug Discovery and Development, Auburn University, Auburn, AL

September 28: Nrf2 in Environmental Response and Disease Intervention Dr. Donna Zhang, Professor, Departments of Pharmacology and Toxicology, University of Arizona, Tuscon, AZ

September 30: When metalloproteins go rogue: application of metalloproteomics to discover drug mechanism of action in neurodegenerative diseases Dr. Blain Roberts, Associate Professor, Department of Medicine, the University of Melbourne, Melbourne, Australia

October 19: Novel Role for a Bone-related Pathway in the Pancreatic Beta Cell Dr. Rupangi Vasavada, Assoc. Professor of Medicine, Icahn School of Medicine at Mount Sinai, New York, NY

October 26: Proteolytic Control of DNA Repair, Reproduction and Tumorigenesis Dr. Pengbo Zhou, Professor of Pathology and Laboratory Medicine, Weill Cornell Medical College, Cornell University, Ithaca, NY

November 2: Targeting TXNIP as a potential therapy for diabetes Dr. Anath Shalev, Professor of Medicine, Endowed Chair in Juvenile Diabetes Research, University of Alabama at Birmingham, Birmingham, AL

November 16: Don't put all your eggs in one basket: A possible role for Riboflavin Binding in Copper Transport and Storage in Oviparous Species. Dr. Sheila Smith, University of Michigan, Dearborn, Dearborn, MI

November 30: Metals in Medicine: From zinc sites in biology to iron nanoparticle based drugs, Dr. Sarah Michel, Department of Pharmaceutical Sciences, University of Maryland, Baltimore, MD
December 7: Shaping Next Generation Aminoglycoside Antibiotics for Treatment of Multidrug-Resistant Diseases Dr. David Crich, Schaap Professor of Organic Chemistry, Department of Chemistry, Wayne State University, Detroit, MI

December 14: "Methamphetamine Induces Anhedonic-Like Behaviour and Impairs Frontal Cortical Energetics in Mice" Akhil Sharma, 2nd Year PhD Student Seminar (PSC 7870), Department of Pharmaceutical Sciences, Wayne State University, Detroit, MI

December 21: "Overview of Photodynamic therapy (PDT) of cancer". Hashem Alsaab, 2nd Year PhD Student Seminar (PSC 7870), Department of Pharmaceutical Sciences, Wayne State University, Detroit, MI