

## **M.O. FARUK KHAN, BPHARM, MPHARM, PHD**

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### **SUMMARY**

- Teaching medicinal chemistry for PharmD student since Spring 2007 at SWOSU COP
- Preparing numerous course materials in the area of medicinal chemistry
- Teaching medicinal chemistry, biochemistry, organic synthesis, reaction mechanisms, peptide synthesis, organic spectroscopy and structure elucidations at other pharmacy schools prior to joining SWOSU
- Supervising and mentoring research projects involving undergraduate, graduate and also postdoctoral researchers
- As a member of Curriculum and Assessment Committees, we have just changed the (pre)professional curriculums and developed a comprehensive assessment plan for the COP
- Publishing research articles, review articles, book chapters, and book (in preparation)
- Writing grants – both successful and unsuccessful
- Initiator and coordinator for the “Consortium for the Genetic Study on the Variability of Response to Natural Medicines” between Universidad de Iberoamerica (UNIBE) and SWOSU.
- Initiator and coordinator for the “Agreement of academic exchange between SWOSU and University of Development Alternatives (UODA), Bangladesh.”
- Working as an expert for National Association of Board of Pharmacy (NABP) as an Item Writer for NAPLEX.
- Other pharmacy related professional job experience include:
  1. Upgraded the quality control facility for a Pharmaceutical Manufacturing Company while working there as a pharmacist.
  2. Worked in all areas of pharmaceutical manufacturing, quality control, packaging and marketing while doing my pharmacist internship for the completion of my B. Pharm. Degree.
  3. Also worked as pharmacist intern (part-time) at Publix Pharmacy, Tallahassee, FL.

### **EDUCATIONAL BACKGROUND**

- **MBA.** Southwestern Oklahoma State University. *Ongoing* (completed 7 labeling courses and 4 courses of MBA, each of 3-credits)
- **PhD.** University of Manchester, UK (1999). Area of specialization: Medicinal Chemistry and rational drug design, organic and peptide synthesis, enzymology. (Supervisor: Prof. K.T. Douglas); Dissertation: *Antiparasitic Drug Design Based on Trypanothione Reductase as a Target.*

- **MPharm.** (Course: Pharmacy, and research: Phytochemistry; Supervisor: Prof. A.K. Azad Chowdhury): Dhaka University, Dhaka, Bangladesh (1991) (First class 2<sup>nd</sup> position); Dissertation: *Antifertility Principles from Marsdenia tinctoria*.
- **BPharm (Hons).** Dhaka University, Dhaka, Bangladesh (1989) (First Class 1<sup>st</sup> position).

## EMPLOYMENT RECORD

### **A. FULL-TIME EMPLOYMENTS:**

1. Associate Professor of Medicinal Chemistry, Southwestern Oklahoma State University College of Pharmacy, August 2011 –. (tenured, effective from August 2012)
2. Assistant Professor of Medicinal Chemistry, Southwestern Oklahoma State University College of Pharmacy, Jan 2007 – August 2011.
3. Research Associate/Adjunct Faculty, Medicinal Chemistry (Supervisor: Prof. H.J. Lee), Florida A & M University College of Pharmacy, Sep 2004 – Dec 2006
4. Postdoctoral Research Associate (Supervisor: Prof. R.F. Borne), University of Mississippi School of Pharmacy, June 2002-Sep 2004
5. Assistant Professor, University of Dhaka Department of Pharmacy (Bangladesh), July 1999 – August, 2004
6. JSPS Postdoctoral Fellow (Supervisor: Prof. E. Kimura), Hiroshima University School of Pharmacy (Japan), October 2001 – March 2002
7. Visiting Scientist (Worked under the International Research Development Award Scheme of the Wellcome Trust), University of Manchester School of Pharmacy (UK), May 2001 – August 2001
8. Lecturer, University of Dhaka, Department of Pharmacy, October 1993 – July, 1999
9. Quality Control Pharmacist, Remedy Pharmaceutical Ltd., Dhaka (Bangladesh), October 1992 – October, 1993
10. Pharmacist Intern, Essential Drugs Company Ltd., Dhaka March 1989 – July, 1989

### **B. PART-TIME EMPLOYMENTS:**

1. Pharmacist Intern (Part-time), Publix Pharmacy, Tallahassee, FL, July 2006-Dec 2006
2. Part time teacher in Department of Pharmacy to teach in the area of biomolecular pharmacy, University of Science and Technology, Chittagong (Bangladesh) Sep 1999 – May 2001
3. Part time instructor to teach the diploma pharmacists at the Arm Forces Medical Core of Bangladesh Army (2000-2002)

## AWARDS, HONORS AND CITATIONS IN BIOGRAPHICAL WORKS

1. Junior Investigator Award, Oklahoma IDeA Network of Biomedical Research Excellence (OK-INBRE), October, 2011- March 2014.
2. Selected by SWOSU to participate in Outstanding Professor's Academy for Oklahoma state educators organized by University of Central Oklahoma, 2008-2009.
3. Biography is included in 2006-2007 (6th) Edition of Who's Who in Medicine and Healthcare
4. Selected as outstanding presentation the poster presented at Annual Biomedical Research Conference for Minority Students (ABRCMS), Anaheim, CA, Nov 8-11, 2006

5. International Research Development Award by “The Wellcome Trust”, UK. The Trust sponsored for performing research on “Development of Antitrypanosomal and Antileishmanial Drug leads” (2000-2002).
6. JSPS Postdoctoral Fellowship award (2001-2002)
7. National Science and Technology Fellowship 1999-2001 for research excellence, awarded by the Ministry of Science & Technology, Bangladesh
8. EUFEPS ‘98 Award for Best Poster. Fourth European Congress of Pharmaceutical Sciences, Milan, September 13, 1998
9. Awarded highly competitive Commonwealth Scholarship for completing PhD in Medicinal Chemistry, October 01, 1995 to December 31, 1998
10. Book award by Dhaka University Registrar for achieving highest marks in Honors final examination
11. Received Dhaka University Scholarship for results in the Honors and masters, examinations.

### **COURSES TAUGHT / CONTRIBUTION TO TEAM-TAUGHT COURSES**

#### **A. AT SWOSU:**

- Pharm 4515 Medicinal Chemistry
- Pharm 5422 (elective) Current Concepts in Medicinal Chemistry
- Pharm 4041 Pharmaceutical Care Lab II (Team-Taught)
- Pharm 3311 Pharmaceutical Care Lab I (Team-Taught)
- Pharm 4302 Drug Information (Contribution in seminar evaluation)

#### **STARTING ON FALL 2011, PHARM 4515 HAS BEEN REPLACED WITH THE FOLLOWING THREE COURSES ALL OF WHICH ARE MY RESPONSIBILITY:**

- Pharm 3405 Fundamentals of Drug Action (5 Credit, Team taught course; I will be coordinating)
- Medicinal Chemistry I Pharm 4512 (2 Credit course)
- Medicinal Chemistry II Pharm 4522 (2 credit course)
- A new elective course “Drug Design and Development” is under development.

#### **B. PRIOR TO JOINING AT SWOSU**

Taught Biochemistry, Pharmacognosy, Medicinal Chemistry, Pharmacology and spectroscopic methods of analysis to the bachelor and graduate level pharmacy students

### **PROFESSIONAL DEVELOPMENT (TEACHING AND SERVICE RELATED)**

#### **ACTIVITIES INVOLVING TEACHER DEVELOPMENT AND EDUCATIONAL METHODOLOGIES**

- a) Participated in “Spring Forum: Design Thinking, Design Living” to represent a 5-member team of SWOSU; organized by The Da Vinci Institute: Oklahoma’s Creativity Think Tank on April 13, 2012 at Tulsa Community College-Metro Campus / Center For Creativity.
- b) Initiated the agreement of academic exchange between SWOSU and UODA and have been acting as the coordinator. Under this agreement, SWOSU will provide assistance with the development of course curriculum for the Pharm.D. program at UODA, the faculties of both

institutions will visit each other for training teaching and research collaborations, and will also explore the possibility of distance learning through ITV.

- c) Participated Assessment and Accreditation Management System (AAMS) “Train the Trainer” session on Wednesday, December 1st from 1:00 – 5:00 p.m. at Rosemont, IL.
- d) Participated in the North American Pharmacist Licensure Examination (NAPLEX) item writing workshop on Thursday and Friday, November 18-19, 2010.
- d. Attended 2009 AACP Curricular Change Summit, (Sep 9-12) Scottsdale Resort and Conference center. Participant as a Curriculum Committee Team Member from SWOSU
- e. Selected at the *Educators’ Leadership Academy, Outstanding Professors’ Academy (OPA) (2008-2009)*, Following sessions have been completed.
  - *OPA Session #1:* September 26 & 27, 2008, Quartz Mountain, “Spirituality & Ethics Leadership”
  - *OPA Session #2:* November 14 & 15, 2008, University of Central Oklahoma, Edmond, “Conflict Management”
  - *OPA Session #3:* January 23 & 24, 2009, Tulsa, “Teams that Work”
  - *OPA Session #4:* Sep 25 & 26, 2009, NCED, Norman, OK, “Polar Explorer as Leader”
- f. Completed faculty development workshop on *Critical Thinking* conducted by SWOSU on March 6, 2008.
- g. Completed faculty development workshop on *Applying Fair Use Doctrine to Colleges & Universities* conducted by SWOSU through online video conferencing on December 11, 2007.
- h. Attended the faculty development workshop on *Developing Your Faculty Web Page* by the SWOSU IT department on November 27 2007.

#### **ACADEMIC EXCHANGE**

I am the initiator and coordinator for the “Agreement of academic exchange between SWOSU and University of Development Alternatives (UODA), Bangladesh.” Under this agreement, SWOSU will provide assistance with the development of course curriculum for the Pharm. D. program at UODA. The two institutions agree to encourage visits from one university to the other for the purpose of training faculty and teaching as well as encourage the exchange of ideas, research, and collaboration of faculty and to explore the possibility of distance education classes through ITV.

#### **CONSORTIUM FOR THE GENETIC STUDY ON THE VARIABILITY OF RESPONSE TO NATURAL MEDICINES**

Visited Universidad de Iberoamerica (UNIBE), Costa Rica as a member of 3-member team (myself + Dean + Pharmacogenomic faculty) during August 05-12, 2010 and studied extensively to form the titled consortium and signed an agreement between UNIBE and SWOSU.

### **GRANTS AND CONTRACTS**

#### **AS PI**

1. Cyclen based novel antimalarial agents. Submitted under Junior Investigator Award, Oklahoma IDeA Network of Biomedical Research Excellence, an NIH grant through the

State of Oklahoma (**Funded**)( \$ 337,000.00; direct + indirect); in progress; 1<sup>st</sup> October 2011 – 31<sup>st</sup> March 2014.

2. Cyclen based novel antimalarial agents. Submitted under ARRA AREA (2010-2013, R15) mechanism (Unfunded)( \$ 364,000.00).
3. Cyclen and Isoquinuclidine based Novel Antimalarial and Antileishmanial Agents. Submitted for NIH funding under RC1 (2009-2011, Recovery Grants) mechanism (unfunded) (\$482,000.00)
4. SWOSU Organized Research for FY08- present “Cyclen-chloroquinoline conjugates as novel antimalarial & antileishmanial drugs” (**Funded and completed**)
5. Synthesis of Isoquinuclidine Analogs of Chloroquine as Potential Antimalarial and Antileishmanial Chemotherapeutic Agents. OK INBRE for 2008-10 (**Funded and completed**)
6. Synthesis of Isoquinuclidine Analogs of Chloroquine as Potential Antimalarial and Antileishmanial Chemotherapeutic Agents. Submitted to the AACP NIP (New Investigator Program) 2007 (Unfunded). (\$10,000)
7. Design, Synthesis and Evaluation of Antimalarial, Antileishmanial and Antitrypanosomal Drugs. (Submitted under NIH AREA grant mechanism (2007-2010, R15) (unfunded) (\$190,000).

#### **CONTRIBUTOR AS A MEMBER OF THE GRANT WRITING COMMITTEE**

SWOSU Biomedical and Behavioral Research Center (SBBRC) submitted under NIH Recovery Act Grants mechanism in 2009 (\$10.0 M) (unfunded)

### **EDITING AND REVIEWING**

#### **GRANT REVIEW**

Grant Application Reviewer for:

- NSF CAREER Grant (2011)
- US Army Medical Research and Materiel Command (USAMRMC) (2006)
- American Institute of Biological Sciences (AIBS) (2006)

#### **EDITORIAL BOARD MEMBER**

Editorial Leader (Textbook): “Medicinal Chemistry for Pharmacy Students”

Online International Journal “Clinical Medicine Insights: Dermatology” (**ISSN: 1178-6582**) (2007-present).

#### **PEER REVIEWER**

- Human and Molecular Genetics (2012-present)
- Peer Reviewer for submitted manuscripts by other authors for following Journals:
- European Journal of Medicinal Chemistry (2007-present)
- Bioorganic and Medicinal Chemistry Letters (2007-present)
- Bioorganic and Medicinal Chemistry (2009-present)
- Current Medicinal Chemistry (2005-present)
- Journal of Biotech Research (2009-present)

- African Journal of Pharmacy and Pharmacology (2008-present)
- Letters in Drug Design and Discovery (2009-present)
- Pharma Scientist (2011-)
- American Journal for Pharmaceutical Education (2011-)

## PROFESSIONAL DEVELOPMENT (RESEARCH)

### 1. **MPHARM RESEARCH PROJECT**

*Bioactivity directed phytochemical investigation of natural products:* Master's research was predominately in the bioactivity directed phytochemical investigation of natural products.

### 2. **PHD RESEARCH PROJECT:**

*Development of antiparasitic drugs.* My PhD work was directed towards the development of anti-trypanosomal and anti-leishmanial agents by rational drug design approaches: The tricyclic neuroleptic framework was identified as a selective TR lead-inhibitor structure. Synthesis, anti-TR activity study and antitrypanosomal and antileishmanial study of various tricyclic quaternary compounds had been performed.

### 3. **POSTDOCTORAL RESEARCH PROJECTS**

#### 1. *Synthesis of cyclen analogs of chloroquine*

This project was initiated in Hiroshima University, Japan under the JSPS postdoctoral fellowship program for 6 months. Then I continued this in Mississippi while doing my postdoc research there during June 2002 – September 2004. I have synthesized some cyclen analogs of chloroquines, purified it by column chromatography, and perform detail chemical analysis including NMR, and MS analyses. The compounds were found to be highly potent antimalarial agent (the most potent one has IC<sub>50</sub> 3.7 ng/ml against D6 clone and 9.5 ng/ml against the resistant W2 strain of *Plasmodium falciparum*), which is comparable to that of artemisinin (IC<sub>50</sub> 3 ng/ml and 1.4 ng/ml, respectively) and better than chloroquine (5.5 ng/ml and 45 ng/ml, respectively) with no cytotoxicity. It was also shown to be highly potent *in vivo* against *Plasmodium berghei* without any sign of toxicity in highest clinical dose tested.

#### 2. *Synthesis of isoquinuclidine analogs of chloroquine*

I developed synthetic route to isoquinuclidine analogs of chloroquine at the University of Mississippi. The semirigid analogs thus synthesized showed potential antimalarial activity *in vitro* against both chloroquine sensitive and chloroquine resistant strains of *P. falciperum*. The most potent one displayed the activity with IC<sub>50</sub> 3.8 ng/ml against D6 clone and 4.0 ng/ml against W2 clone of *Plasmodium falciperum*, which is comparable to those of artemisinin (IC<sub>50</sub> 3.6 ng/ml and 1.8 ng/ml, respectively) and better than chloroquine (IC<sub>50</sub> 7.0 ng/ml and 115.0 ng/ml, respectively) with no cytotoxicity (SI >1252.3 against D6 and >1190 against W2 clone). Further studies are in progress to synthesize the most potent *in vitro* compound in larger scale for *in vivo* studies against malaria parasites.

#### 3. *Development of anti-addictive and CNS active drugs:*

The presence of the isoquinuclidine (2-azabicyclo[2.2.2]octane) ring system in natural products (such as ibogaine and dioscorine) that display interesting pharmacological properties has intrigued chemists and medicinal chemists for decades. The isoquinuclidine ring system may be viewed as a semi-rigid boat form of the piperidine ring and, when properly substituted, as a scaffold for rigid analogs of biologically active ethanolamines and

propranolamines. Design and synthesis of isoquinuclidine derivatives as important pharmacophores by combinatorial approach have been completed. During my postdoctoral research at the University of Mississippi, we have developed a >100 member small library of the isoquinuclidine analogs.

4. *Antedrug approach to safer drugs (glucocorticoid-based anti-inflammatory drug development):*

My postdoctoral research at Florida A&M University (September 2004 – December 2006) was directed towards the development of anti-inflammatory steroidal antedrugs. Metabolic biotransformation is the common characteristic of a prodrug and an antedrug that leads to either activation or inactivation of a molecule as illustrated in following Figure. A true antedrug acts locally and undergoes only one predictable metabolic step to an inactive metabolite.

4. **RESEARCH PROJECTS AT SWOSU**

1. *Antiparasitic drug development:*

The overall goal of this project is to expose students to basic research, including developing experience with experimental techniques and data interpretation. The major experimental goal of the research is to gain insight into the development of therapeutic agents to treat malaria and leishmaniasis. Both antimalarial drug development projects involving the cyclen chloroquine analogs and isoquinuclidine analogs of chloroquine are being conducted here at SWOSU involving the undergraduate students. I received two grants from INBRE to conduct these research activities and involved >10 students. Now, a postdoctoral research assistant is working in this area.

5. **COLLABORATIVE RESEARCH**

- My major research on antiparasitic drug discovery currently going on is in collaboration with University of Mississippi under a material transfer agreement with the Principal Scientist of Natural Product Center, Dr. Tekwani.
- My other potential area of important collaborative research in the area of anti-inflammatory steroidal antedrug design was in progress until Dr. Lee of Florida A&M University retired on 2009. He is in agreement that he will support me as consultant if I am interested to continue the research with NIH funding.
- I am also an important contributor and active collaborator for the research in the area of anti-breast cancer drug discovery with Dr. Musa, assistant professor of Department of Chemistry of Florida A&M University.
- Have been in interaction with Dr Timothy N.C. Wells, Chief Scientific Officer of Medicines for Malaria Venture (Geneva Switzerland), who showed interest on my work by reading my published paper in Antimicrobial Agents and Chemotherapeutics.
- **“Consortium for the Genetic Study on the Variability of Response to Natural Medicines”** has been formed after the visit to UNIBE, Costa Rica of the 3-member team comprising of myself, the Dean and the pharmacogenomic faculty of the college. The main vision of the consortium is to explore the natural products (plants) of Costa Rica for anti-oxidant, anti-inflammatory, anti-cancer drugs and study their detail pharmacogenomic characteristics. It is especially notable that I played the key role in this venture.

- **Collaboration with UK Institutes:**

1) The **University of Cambridge**, I have been collaborating with one of the scientists, Dr. Taufiq Ur Rahman, who is conducting the molecular modeling studies against estrogen receptor for our research activity in the area of breast cancer. We have published one paper in collaboration with him. Most recently we have taken a new dimension in this research. A virtual screening of 0.5M drug like compounds from Cambridge data base (Hit2Lead) to come up with ~20 compounds. Out of these 6 most promising compounds are in progress to do further receptor binding assay against ER $\alpha$  receptor in **collaboration with an NIH scientist**. On completion of assay of 10 synthetic compounds with antiproliferative activity against breast cancer cell lines that showed strong affinity for ER $\alpha$ , with three being at submicromolar concentration, testing of 6 compounds obtained from Hit2Lead are in progress.

2) I am also collaborating with a research fellow in translational medicine at **King's College London**, Dr. T Nasim. The focus is the discovery of drugs against pulmonary hypertension with new approaches. One approach includes the TGF $\beta$  receptors. We tested few compounds against TGF $\beta$  receptor as well as performed some cellular studies, which have been shown to be promising and the results have been submitted for publication to *PNAS*. The other approach is to discover some benzoic acid derivatives as lead compounds that promote translation read through of pathogenic nonsense mutation of BMPR2 protein and restore signaling defects in cellular models of pulmonary hypertension.

### **PROFESSIONAL AND SCIENTIFIC MEETINGS**

1. *June 20-22, 2012*. NIH Regional Seminar on Program Funding & Grant Administration, Washington, D.C. (Scheduled).
2. *July 14-16, 2012*. AACP Annual Meeting, Kissimmee, FL. Cyclen Based Novel Antiparasitic Agents: Regioselective synthesis of 4,10-bis(7-chloroquinoline)-1,7-dimethyl-1,4,7,10-tetraazadodecane. P Amoyaw, C Burnett, BL Tekwani; RF Borne MOF Khan. (poster presentation; accepted)
3. *June 25-27, 2012*. NISBRE, Washington D.C. Cyclen Based Novel Antiparasitic Agents. P. Amoyaw, C Burnett, T Martin, BL Tekwani, MOF. Khan, (poster presentation; accepted)
4. *June 16-17, 2010*. Encouraging Development of Therapeutics for Neglected Diseases, Philadelphia, PA. Cyclen Based Novel Antiparasitic Agents, MOF Khan, MW Cochran, BL Tekwani, RF Borne (poster presentation)
5. *Sep 9-12, 2009*. 2009 AACP Curricular Change Summit, Scottsdale Resort and Conference center. Participant as a Curriculum Committee Team Member from SWOSU.
6. *Aug 17-21, 2008*. American Chemical Society 236<sup>th</sup> National Meeting & Exposition, Philadelphia, PA. MA Musa, MOF Khan, JS Cooperwood. The synthesis and biological evaluation of coumarin-estrogen conjugates as potential antiproliferative agents. (poster presentation)
7. *March 14, 2008*. Missouri Valley Branch of the American Society of Microbiology at William Jewell College in Liberty, Missouri. A Aspedon, MOF Khan, MA Musa. Antibacterial activity of novel bisphenol amines. (poster presentation)
8. *May 10-12, 2007*. FLACS (American Chemical Society – Florida Section) Florida Annual Meeting and Exposition, Orlando, FL. MA Musa, JS Cooperwood, MOF Khan. The



synthesis and biological evaluation of coumarin-estrogen conjugates as potential anti-breast cancer agents. (poster presentation)

9. *Nov 8-11, 2006.* Annual Biomedical Research Conference for Minority Students (ABRCMS), Anaheim Conference Center and Anaheim Marriott, CA. MOF Khan, KK Park, HJ Lee. New Anti-inflammatory Steroidal Antedrugs: The 21-Thioalkylether and 17-Alkylester Derivatives of 16-Prednisolone Carboxylates (poster presentation). **Selected as outstanding presentation.**
10. *April 24-26, 2006.* AAPS (American Association of Pharmaceutical Scientist) Conference on Critical Issues in Discovering Quality Clinical Candidates, Philadelphia, PA. MOF Khan, K-K Park, HJ Lee. Strategies of Structural Modifications for Safer Therapeutic agents: Antedrugs. (poster presentation)
11. *April 24-26, 2006.* IBC Life Science Drug Discovery and Development Summit, Tokyo, Japan. HJ Lee, MOF Khan, K-K Park. A novel approach to potent, yet safer drugs: antedrugs (oral presentation by H.J. Lee).
12. *March 26-30, 2006.* 231<sup>st</sup> ACS National Meeting, Atlanta, GA. MOF Khan, K-K Park, HJ Lee. Synthesis and biological evaluation of 21-thioalkylether derivatives of methyl 16-prednisolone carboxylates as a new class of anti-inflammatory steroidal antedrugs. (Oral presentation).
13. *April 6-8, 2005.* The 20<sup>th</sup> RCMI (Research Center in Minority Institutes) Annual Spring Symposium. Houston, Texas. MOF Khan, KK Park, HJ Lee. Antedrugs: an approach to safer drugs. (poster presentation)
14. *September 5, 2003.* 3<sup>rd</sup> Annual Meeting of the Consortium for Antimalarial Development, New Orleans, Louisiana, USA. Synthesis of isoquinuclidine analogues as antimalarial agents. (oral presentation)
15. *September 5, 2003.* 3<sup>rd</sup> Annual Meeting of the Consortium for Antimalarial Development, New Orleans, Louisiana, USA. Synthesis and antimalarial activity of cyclen analogues. (oral presentation)
16. *December 7, 2000.* *British Pharmaceutical Conference, Barmingham (UK).* 'Medicines- the future horizon'. MOF Khan, SE Austin, C Chan, H Kendrick, V Yardley, SL Croft and KT Douglas. Rational drug design of antitrypanosomal drug leads: Improved trypanothione reductase inhibitors). (poster presentation)
17. *September 11-13, 1998.* Fourth European Congress of Pharmaceutical Sciences, Milan, Italy. MOF Khan, SE Austin, C Chan, H Yin, D Marks, SN Vaghjiani, H Kendrick, V Yardley, SL Croft, KT Douglas. Rational design of second generation improvements of tricyclic lead inhibitors of trypanothione reductase as potential antitrypanosomal and antileishmanial drugs. (poster presentation) (**Awarded the best poster**)
18. *April 1-4, 1997.* International Conference on Improving Use of Medicines: State of the Art and Future Directions, Chiang Mai, Thailand. AKA Chowdhury, MOF Khan, MA Matin, K Begum, MA Gulib. Effect of standard treatment guidelines with or without adult on prescribing for acute respiratory infections in government health facilities in Bangladesh (oral presentation).

## INVITED LECTURES

1. *January 3, 2012.* A seminar at the University Of Development Alternative, Dhaka, Bangladesh. A keynote speech delivered on “Transitioning to the Doctor of Pharmacy Degree.”
2. *February 24, 2005.* Graduate Seminar Series. College of Pharmacy, Florida A & M University, Tallahassee, FL 32307. Anti-trypanosomal and anti-leishmanial drug design based on trypanothione reductase as a target.

## MEMBERSHIP/LEADERSHIP IN PROFESSIONAL SOCIETIES

- American Association of College of Pharmacy (2007-2008; 2012- present)
- American Association of Pharmaceutical Scientists (2005 – 2008; 2012 - present)
- American Chemical Society, (2005 – 2010)
- American Association of Bangladeshi Pharmaceutical Scientists (2008-present)
- Elected joint secretary of the Pharmacy Graduates’ Association of Bangladesh (PGA) (1999)
- President of the Bangladesh Students Society, Manchester, UK (1997 – 1998).
- Elected executive council member of the PGA (1990 – 1995).

## SERVICES

### 1. RESEARCH SUPERVISING AND MENTORING

- Mentored about 10 Pharm.D. students and other undergraduate students of chemistry and biology majors.
- Supervising a postdoctoral research assistant under the grant from OK-INBRE (Junior Investigator Award)

### 2. UNIVERSITY SERVICE

- Member, *University Research and Scholarly activity committee*, 2012 – 2014.
- Member, *College of Pharmacy Pharmaceutics Faculty Search Committee*, 2012.
- Member, *University Search Committee* for Director of the Office of Sponsored Programs (2010)
- Member, *University Intellectual Property Committee*, 2007-present  
Contributed to the complete review and modification of the Intellectual Property Policies (IPP), governing patents, copyrighted material, trademarks, and other intellectual property created or used by the Southwestern Oklahoma State University community.
- Member, *University Committee for Council for Undergraduate Research*, 2008 – present  
As a member of this committee represented SWOSU’s undergraduate research activity and attended the workshop on institutionalizing undergraduate research with the provost and the Director of Sponsored Program at **Oklahoma Workshop on Institutionalizing Undergraduate Research (CUR workshop)**, September 24-26, 2008, Edmond, OK. During this workshop we have developed a research policy for SWOSU which was sent to each college for implementation.
- Member, *College of Pharmacy Assessment Committee*, 2009-present. As a member of this committee I have been contributing in preparing, modifying and reviewing the COP

strategic plan on a regular basis. Also developed a comprehensive assessment plan for the college in conjunction with other faculties.

- Member, *College of Pharmacy Curriculum Committee* 2009-present.
- Member, *College of Pharmacy Recruitment Committee*, 2007 – 2008
- *Faculty co-advisor for the School of Pharmacy Alpha Omega Chapter of the Phi Delta Chi Pharmacy Fraternity*, 2009 – present
- Member, *College of Pharmacy Faculty Search Committee* for faculty hire in the area of pharmacogenomics/pharmacology (2009)
- Member, *College of Pharmacy Self-study sub-committee (assessment)* for the American Council on Pharmaceutical Education accreditation of the Doctor of Pharmacy program, 2008-2009.
- Member, *College of Pharmacy Supply and Facilities Committee*, 2008-2009
- Member, *College of Pharmacy Self-study sub-committee (Facilities)* for the American Council on Pharmaceutical Education accreditation of the Doctor of Pharmacy program, 2007-2008
- Faculty *interviews of School of Pharmacy applicants*, 2007 – present

### 3. COMMUNITY AND PUBLIC SERVICE

- Member, *Weatherford Chamber of Commerce, Health Education Committee*, 2010-present
- Member, *Weatherford Chamber of Commerce, Education Committee*, 2010-present
- *Volunteer for the Agape Free Clinic*, Weatherford, OK, 2010 – present

### 4. NATIONAL AND INTERNATIONAL SERVICES

- **North American Pharmacist Licensure Examination (NAPLEX) Item Writer, National Association of Boards of Pharmacy (NABP)**, 2010 -
- Member, *Resolution Committee (now Rules & Resolutions Committee)*, *American Association of Colleges of Pharmacy*, 2008 – present
- Member, *Editorial Board, Clinical Medicine Insights: Dermatology* (ISSN: 1178-6582) (2007 – present)

## PUBLICATIONS

### A. BOOK & BOOK CHAPTERS

1. **Text Book EDITOR – Medicinal Chemistry for Pharmacy Students: Spring 2013, Publisher: Jones and Bartlett Learning, Sudbury, MA. (Manuscript in preparation). (Chapters listed from 4-20 below are coauthored by me)**
2. MJ Deimling, MOF Khan, GR Ortega. Vitamins (Chapter 28), in **Wilson and Gisvold's Textbook of Organic Medicinal and Pharmaceutical Chemistry, Twelfth Edition, 2010, Lippincott Williams & Wilkins.**
3. **MOF Khan**, MS Levi, CR Clark, SY Ablordeppey, S-J Law, NH Wilson and RF Borne, Isoquinuclidines: A Review of Chemical and Pharmacological Properties. In Book Series: *Studies in Natural Product Chemistry*,v 34, 2008, Atta-ur-Rahman Eds. Elsevier BV, Amsterdam, Netherlands. p 753-787.
4. **Chapter 1: Introduction.** MOF Khan and Ashok Philip. (*First Draft Completed*).
5. **Chapter 2: The Biomolecules.** MOF Khan and Ashok Philip. (*Manuscript in preparation*).

6. **Chapter 3: Acid-Base Chemistry and Salt Formation. MOF Khan, Hardeep Sing Saluja, and Delwar Hussein. (First Draft Complete)**
7. **Chapter 4: Solubility and Lipid-Water Partition Coefficient. MOF Khan, Hardeep Sing Saluja and Delwar Hussein. (First Draft Completed)**
8. **Chapter 5: Isosteric and Spatial Considerations of Drugs. MOF Khan and J. Cody Timmons. (First Draft Complete)**
9. **Chapter 6: Fundamentals of Drug Action. MOF Khan and Taufiq Rahman. (First Draft Complete).**
10. **Chapter 7: Drug metabolism, Prodrugs, Antedugs and Softdrugs. MOF Khan, Ashok Philip, RT, D Hussein and Joel Owen. (Manuscript in preparation).**
11. **Chapter 8: Some Important Biosynthetic Pathways. MOF Khan and Jayson Jonson. (First Draft Complete)**
12. **Chapter 10: Drugs affecting Adrenergic system. MOF Khan and Carroll L Ramos. (First Draft Complete)**
13. **Chapter 16: Drugs Acting on Renin-Angiotensin System. MOF Khan and Scott Long. (First Draft Complete)**
14. **Chapter 17: Ca<sup>+2</sup> channel blockers MOF Khan and Taufiq Rahman. (Manuscript in Preparation)**
15. **Chapter 18: Diuretics. MOF Khan and Dave Weldon. (Manuscript in Preparation)**
16. **Chapter 20: The H1 and H2 Blockers and Proton Pump Inhibitors. MOF Khan and Carroll L Ramos. (First Draft Complete).**
17. **Chapter 22: Nonsteroidal Anti-inflammatory Agents (NSAIDs). MOF Khan and Scott Long. (First Draft Complete)**
18. **Chapter 23: Agents for Treatment of Gout and Rheumatoid Arthritis. Ashok Philip and MOF Khan. (Manuscript in preparation).**
19. **Chapter 30: The Antineoplastic Agents. X Guan and MOF Khan. (First draft complete)**
20. **Chapter 34: The rational drug design. MOF Khan and Vladyslav Kholodovych. (Manuscript in Preparation)**

#### **B. CE ARTICLE/NEWS LETTER**

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2. **AKA Chowdhury, MOF Khan, MA Matin, Z Haque. Impact of standard treatment guidelines and small group training on prescribing for diarrhoea in under-five children in Bangladesh. *INRUD News* 5(2) 20 (1996). (International Network for Rational Use of Drugs' News Letter).**
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#### **C. PEER REVIEWED JOURNAL ARTICLES**

1. **MOF Khan, MJ Deimling, A Philip. Medicinal Chemistry: A Unique and Indispensable Component of Pharmacy Curriculum. *Am. J. Pharm. Edu.* (2011)**

2. MA Musa, JS. Cooperwood, **MOF Khan** and T Rahman. *In vitro* antiproliferative activity of benzopyranone derivatives in comparison with standard chemotherapeutic drugs. *Archiv der Pharmazie, Life Sci.* (2010, Published early view online on 26<sup>th</sup> Nov)
3. MA Musa, **MOF Khan**, A Aspedon, JS Cooperwood. Synthesis and antimicrobial activity of N,N-bis(2-hydroxybenzyl)-N,N-dimethylethane-1,2-diamine derivatives. *Lett. Drug Des. Discov.* 7, 165-170 (2010).
4. **MOF Khan**, MS Levi, BL Tekwani, SI Khan, E Kimura, RF Borne. Synthesis and antimalarial activities of cyclen 4-aminoquinoline analogs. *Antimicrob. Agents Chemother.* 53(4), 1320-1324 (2009). (Mentioned in the Malaria World Nr. 202 – 30 March 2009)
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14. AKA Chowdhury; **MOF Khan**; MA Matin; K Begum; MA Galib. Effect of standard treatment guidelines with or without prescription audit on prescribing for acute respiratory tract infection (ARI) and diarrhoea in some thana health complexes (THCs) of Bangladesh. *Bangladesh Medical Research Council bulletin*, 33(1), 21-30, (2007).
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36. AKA Chowdhury, **MOF Khan**, MF Hashim, MA Rashid. New steroidal compounds from *Marsdenia tinctoria*. *Journal of Bangladesh Academy of Sciences*, *18*(1), 39-45, 1994.
37. AKA Chowdhury, **MOF Khan**, MF Hashim. Antifertility activity of ether extract and a steroidal Component (HF) of the extract of the flowers of *Hibiscus rosasinensis*. *Bangladesh Pharmaceutical Journal*, *11*(1), 16-19, (1993).
38. AKA Chowdhury, MA Matin, MA Islam, **MOF Khan**. Prescribing pattern in acute diarrhoea in three districts in Bangladesh. *Tropical Doctors*, *23*, 165-66, (1993).

#### **D. MANUSCRIPT IN PREPARATION**

1. MA Siddiqui, M Ahmed, T Ogo, HM Chowdhury, L Long, NW Morrell, MOF Khan, RC Trembath and MT Nasim. Acetylamino-benzoic acids elicit anti-TGF $\beta$  activity in pulmonary arterial hypertension (PAH). (Submitted to *PNAS*)
2. MOF Khan\*, BL Tekwani, RF Borne. Antileishmanial activity of cyclen 4-amino quinolone analogs.
3. MOF Khan\*, BL Tekwani; RF Borne. In vitro metabolic stability of cyclen based novel antimalarial agents.
4. MA Musa, MOF Khan, A Philip. A Review of Coumarin Derivatives as Anti-infective Agents.
5. M Hossain, M Ahmed, T Ogo, HM Chowdhury, A Thomas, K Brown, MOF Khan, NW Morrell, RC Trembath and MT Nasim\*. Resolution of BMPRII mediated signalling defects by promotion of translation readthrough in pulmonary arterial hypertension.