

MUTASEM (Mark) RAWAS QALAJI

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Web Page: [University of Sharjah](#) , [Nova Southeastern University](#)
Research Group: [Drug Delivery Group](#)

SUMMARY OF RELEVANT BACKGROUND

➤ **Administrative Experience**

- Chairman, Department of Pharmaceutics and Pharmaceutical Technology, College of Pharmacy, University of Sharjah, United Arab Emirates (2020-Present)
- Research Group Leader, Drug Delivery Research Group, Research Institute of Medical & Health Sciences, University of Sharjah, United Arab Emirates (2019-Present)
- Founding Director, NSU's Center for Drug Discovery and Development (CD³), Nova Southeastern University, FL (2016-2019)

➤ **Academic Research and Teaching Experience** (*more than twenty years*)

- College of Pharmacy, University of Sharjah, Sharjah, UAE (2019-present)
- College of Medicine, Nova Southeastern University, FL (2017-present)
- College of Education, Nova Southeastern University, FL (2018-2019)
- College of Natural Sciences and Oceanography, Nova Southeastern University, FL (2018-2019)
- College of Pharmacy, Nova Southeastern University, FL (2008-2019)
- Faculty of Science, University of Manitoba, Winnipeg, Canada (2002-2006)
- Faculty of Pharmacy, University of Manitoba, Winnipeg, Canada (2001-2006)

➤ **Pharmaceutical Industry Experience** (*more than twenty six years*):

- Formulation Consultant, SanMelix Laboratories, Pembroke Pines, Florida, USA (2018)
- Advisory Board Member, SanMelix Laboratories, Pembroke Pines, Florida, USA (2018)
- Litigation Formulation Consultant, multiple Law Firms, USA (2012-current)
- Formulation Scientist, EnWave Corp., Vancouver, British Columbia, Canada (2008)
- NSERC Postdoctoral Fellow - Formulation, Pre-clinical Development, Quadra Logic Technologies (QLT) Inc., Vancouver, British Columbia, Canada (2007-2008)
- Medical Science Liaison, F. Hoffmann-La Roche, Riyadh, Saudi Arabia (1995-2001)

➤ **Research Experience** (*more than twenty years*):

- Pharmaceutical Dosage Forms Design and Development
- Nanoparticles, nanocrystals, and nanofibers fabrication and characterization
- Quality Control testing, stability, release, diffusion, and permeability studies (Franz cells)
- Animal Studies: Pharmacokinetics, bioequivalency and bioavailability studies
- Analytical Statistical Analysis

➤ Technologies and Patents Evaluation (**53 patent applications, 7 granted patents**)

➤ Technology Transfer and Licensing (**5 license contracts to Pharma**)

➤ Research Contracts (**5 contracts**)

➤ Grants Reviewer and External Examiner (International and National)

EDUCATION

- 2001-2006 **Ph.D. (Pharmaceutics)**
Faculty of Pharmacy, University of Manitoba, Winnipeg, Manitoba, Canada
- 1990-1995 **Bachelor of Pharmaceutical Sciences (B. Pharm) (Honor)**
Faculty of Pharmacy, King Saud University, Riyadh, Saudi Arabia

PROFESSIONAL WORKSHOPS AND TRAININGS

- 2012 **Grant Writing Workshop - National Institutes of Health (NIH)**
University of Kentucky, Lexington, KY
- 2006 **Strategic Training in Allergy Research (ST*AR Program)**
American Academy of Allergy, Asthma & Immunology's (**AAAAI**), USA
- 1995 Pharmaceutical Industries & Medical Appliances Corporation (SPIMACO)
Industrial Training – 2 weeks
(SPIMACO), Al Kassim, Saudi Arabia

WORK EXPERIENCE

Administrative

- 2020-present Chairman, Department of Pharmaceutics and Pharmaceutical Technology
College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates
- 2019-present Research Group Leader, Drug Delivery Research Group
Research Institute of Medical & Health Sciences (RIMHS)
University of Sharjah, Sharjah, United Arab Emirates
- 2019-2020 Deputy Chair, Department of Pharmaceutics and Pharmaceutical Technology
College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates
- 2016-2019 Founding Director, NSU's Center for Drug Discovery and Development ([CD³](#))
Nova Southeastern University, Fort Lauderdale, Florida
- 2018-2018 Advisory Board Member,
SanMelix Laboratories, LLC, Pembroke Pines, Florida
- 2018-present Executive Committee Member,
Arab American Pharmaceutical Scientists
- 2015-2017 Board Member-South Florida Chapter,
Syrian American Medical Society (SAMS)
- 2018-2019 Board Member,
STEM School, Sunrise, Florida
- 2015-2018 Board Member,
Florida Refugee Assist Committee, Florida

Academia

- 2019-present Associate Professor
Department of Pharmaceutics & Pharmaceutical Technology,
College of Pharmacy, University of Sharjah

- Sharjah, UAE
- 2018-2019 Affiliated Associate Professor
Abraham S. Fischler College of Education, Nova Southeastern University
Fort Lauderdale, Florida, USA
- 2018-2019 Affiliated Associate Professor
Halmos College of Natural Sciences and Oceanography
Fort Lauderdale, Florida, USA
- 2017-present Affiliated Associate Professor
College of Medicine, Nova Southeastern University
Fort Lauderdale, Florida, USA
- 2014-2019 Associate Professor
Department of Pharmaceutical Sciences,
College of Pharmacy, Nova Southeastern University
Fort Lauderdale, Florida, USA
- 2008-2014 Assistant Professor
Department of Pharmaceutical Sciences,
College of Pharmacy, Nova Southeastern University
Fort Lauderdale, Florida, USA
- 2004-2005 Instructor
Faculty of Pharmacy, University of Manitoba
Winnipeg, Manitoba, Canada
- 2004-2006 Instructor
Faculty of Sciences, University of Manitoba
Winnipeg, Manitoba, Canada
- 2002-2005 Teaching Assistant
Faculty of Pharmacy, University of Manitoba
Winnipeg, Manitoba, Canada
- 2002-2006 Teaching Assistant
Faculty of Sciences, University of Manitoba
Winnipeg, Manitoba, Canada
- 2004-2004 Research Assistant
Faculty of Pharmacy, University of Manitoba, Winnipeg, Manitoba, Canada

Pharmaceutical Industry

- 2018-2018 Formulation Consultant, SanMelix Laboratories, Pembroke Pines, Florida
- 2012-present Litigation Formulation Consultant, multiple Law Firms, USA
- 2008 Research Scientist
EnWave Corp., Vancouver, British Columbia, Canada
- 2007-2008 NSERC Postdoctoral Fellow
(Natural Sciences and Engineering Research Council Industrial Postdoctoral
Fellow)
Formulation - Preclinical Development
Quadra Logic Technologies (QLT) Inc., Vancouver, British Columbia, Canada
- 1995-2001 Medical Science Liaison, F. Hoffmann-La Roche Ltd, Saudi Arabia

TEACHING EXPERIENCE

Courses taught in the Bachelor of Pharmacy Program:

College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates

- 2019-present Pharmaceutics 3 (1103511) - 3 credits
Course Coordinator
 Taught 100% of the course (**2 sections, 2019 only**), Total class size: 47 students
(Fall, Spring, and Summer terms)
- 2019-2020 Drug Development (1101521) - 3 credits
 Taught 30% of the course (**2 sections**), Total class size: 53 students (**Fall and Spring terms**)

Faculty of Pharmacy, University of Manitoba, Winnipeg, Manitoba, Canada

- 2005-2006 46.452: Pharmaceutical Sciences Laboratory - 2 credits
 Taught and trained 100% of the course, ~2 students (Winter term)
- 2005 PHRM3550: Clinical Pharmacokinetics - 3 credits
 Taught 1 lecture, Class size: 50 students (Fall term)

Teaching Assistant

- 2002-2006 46.130: Fundamentals of Pharmaceutics (compounding lab), 1st year
- 2002-2006 46.239: Dispensing Laboratory 1 (compounding lab), 2nd year
- 2003-2006 46.239: Dispensing Laboratory 1 (skills lab), 2nd year
- 2003-2006 46.349: Contemporary Pharmacy Skills (skills lab), 3rd year
- 2003-2006 46.349: Contemporary Pharmacy Skills (dispensing Rx medications), 3rd year

Courses taught in the Pharm. D. Program:

College of Pharmacy, Nova Southeastern University, Fort Lauderdale, Florida, USA

- 2018-present PHRC4840: Dosage Forms and Drug Delivery (Physical Pharmacy & Dosage Forms) - 4 credits
Course Coordinator
 Taught 40% of the course, Class size: ~230 students (Fall term)
- 2012-2018 PHA4120: Pharmaceutics II (Pharmaceutical Dosage Forms) - 2 credits
Course Coordinator
 Taught 60% of the course, Class size: ~250 students (Winter term)
- 2018 PHRE5445: Leadership, Engagement, and Development – 2 credits (Winter term)
 Taught 1 lecture (Guest Professor), Class size ~30 students
- 2017 PHRC 6540: Pharmacy Practice Seminar – 1 credit (Winter term)
 Taught 1 lecture (Guest Panel), Class size: ~230 students
- 2016 PHRC 6540: Pharmacy Practice Seminar – 1 credit (Winter term)
 Mentored students to conduct literature search, write a report and present.
 Trained 6 students for the annual poster night event

- 2009-2011 PHA4110: Pharmaceutics II (Pharmaceutical Dosage Forms) - 3 credits
Course Coordinator
 Taught 60% of the didactic, Class size: ~200 students (Winter term)
- 2011-2012 PHA5999: Research in Pharmaceutical Sciences (elective) - 3 credits
 Taught and trained 100% of the course, 1 student (Summer, Winter, and Fall)
- 2011 PHA5993: Literature Research in Pharmaceutical Sciences (elective) - 3 credits,
 Mentored and trained 100% of the course, 1 student (Winter, Summer, and Fall terms)
- 2010 PHA 6630: Therapeutics and Pathophysiology III – 4 credits
 Mentored students to conduct literature search, write a report and present.
 Trained 4 students for the annual poster night event, (Winter term)
- 2009-2010 PHA5115: Advances in Drug Delivery (elective course) - 2 credits
 Taught 50% of the course, Class size: ~40 students (Fall term)
- 2009 PHA4310: Pharmaceutical Marketing - 2 credits
 Taught 1 lecture, Class size: 197 students
- 2008 PHA4100: Pharmaceutics I (Physical Pharmacy) – 3 credits
 Taught 2 lectures, Class size: 202 students (Fall term)
- 2008 PHA5300: Social and Behavioral Pharmacy - 2 credits (Fall term)
 Taught 1 lecture (Guest Panel), Class size: 236 students

Courses Taught in the **Master Program**:

College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates

- 2020-present Advanced Drug Delivery Systems (1103621) - 3 credits
Course Coordinator
 Taught 100% of the course, Total class size: 8 students (Spring term)
- 2020-present Regulatory Affairs (1103623) - 3 credits
Course Coordinator
 Taught 100% of the course, Total class size: 10 students (Spring term)
- 2019-present Research Ethics (1103611) - 1 credit
Course Coordinator
 Taught 100% of the course, Total class size: 13 students (Fall term)

College of Pharmacy, Nova Southeastern University, Fort Lauderdale, Florida, USA

- 2017-present PHRM5204: Research Techniques and Instrumentation - 3 credits
 Taught 2 lectures, Class size: ~2 students (Fall term)
- 2018-present PHRM5229: Product Development and Industrial Pharmacy – 3 credits
Course Coordinator
 Teaching 60% of the course, Class size: ~2 students (Winter term)
- 2018-present PHRM5120: Pharmaceutics II (Pharmaceutical Dosage Forms) - 2 credits
Course Coordinator
 Teaching 60% of the course, Class size: ~4 students (Winter term)

Courses Taught in the **Ph.D. Program**:**College of Pharmacy, Nova Southeastern University, Fort Lauderdale, Florida, USA**

- 2016-present PHRP7229: Product Development and Industrial Pharmacy – 4 credits
Course Coordinator
 Taught 30% of the course, Class size: ~3 student (Fall term)
- 2016-present PHRP7250: Advanced Topics in Pharmaceutical Sciences – 1 credit
Course Coordinator
 Taught 100% of the course, Class size: ~1 student (Winter term)
- 2016-present PHRP7250: Advanced Topics in Pharmaceutical Sciences – 2 credit
 Taught 3 lectures, Class size: ~1 student (Fall term)
- 2014-present PHRP8100: Dissertation Research – 8 credits (per student)
Course Coordinator
 Taught and mentored students for their dissertation research, No. of students: 3
 (Fall, Summer, and Winter terms)
- 2013-present PHRP7002: Graduate Seminar – 1 credit
 Taught and mentored students for their seminars: 4 students
- 2011-present PHRP7204: Research Techniques and Instrumentation - 3 credits
 Taught 2 lectures, Class size: ~9 students (Fall term)
- 2010-present PHRP7000: Graduate Research – 2 credits
Course Coordinator
 Taught and mentored graduate students conducting their research and performing Lab rotations for incoming students ~12 students (Fall, Winter, and Summer terms)
- 2012-2015 PHRP7212: Advances in Drug Delivery - 3 credits
Course Coordinator
 Taught 100% of the course, Class size: ~6 students (Winter term)
- 2011-2015 PHRP 7005: Pharmaceutical Formulations and Product Development - 3 credits
 Taught 2 lectures, Class size: ~6 students (Fall term)
- 2010-2011 PHRP 7004: Advanced Physical Pharmacy - 3 credits
 Taught 1 lecture, Class size: ~5 students (Fall term)

Courses Taught in the **Undergraduate Programs**:**Abraham S. Fischler College of Education, Nova Southeastern University, Fort Lauderdale**

- 2018-present RAZR 2501: Field Experience - 1 credit
 Teaching 100% of the course, Class size: ~1 students (Winter term)
- 2018-present RAZR 3502: Field Experience - 1 credit
 Teaching 100% of the course, Class size: ~1 students (Summer term)

Halmos College of Natural Sciences and Oceanography, Nova Southeastern University

- 2018-present BIOL4990: Independent Study Elective Course – 2 credits
 Teaching 100% of the course, Class size: ~1 students (Fall term)
- 2019-present BIOL4950 Internship – 2 credit
 Teaching 100% of the course, Class size: ~1 students (Winter term)

Faculty of Science, University of Manitoba, Winnipeg, Manitoba, CA

- 2004-2006 BIOL2410: Human Physiology I (2nd year) - 3 credits
Course Coordinator
Taught 100% of the course, Class size: ~85 students (Summer term)
- 2004-2006 BIOL2420: Human Physiology II (2nd year) - 3 credits
Course Coordinator
Taught 100% of the course, Class size: ~65 students (Summer term)
- 2006 BIOL3462: Environmental Physiology of Animals II - 3 credits
Lab Coordinator
Taught 100% of the course, Class size: ~28 students (Winter term)
- 2005 BIOL2420: Human Physiology II (2nd year) - 3 credits
Taught 30% of the course, Class size: 150 students (Winter term)
- 2005 BIOL3460: Environmental Physiology of Animals I - 3 credits
Lab Coordinator
Taught 100% of the course, Class size: 26 students (Fall term)
- 2004 BIOL1412: Physiology of the Human Body (1st year) - 3 credits
Taught 100% of the course, Class size: 98 students (Fall term)

Teaching Assistant

- 2001-2005 BIOL1410: Anatomy of the Human Body, 1st year
- 2001-2005 BIOL1412: Physiology of The Human Body, including the tutorials, 1st year

RESEARCH INTEREST & EXPERIENCE

Pre-formulation and Preclinical Testing

- Solubility, stability (long and short-term), and compatibility studies at different parameters like additives, temperature, pH, humidity, light, oxygen, antioxidant, and/or inert atmosphere.
- Utilizing various types of solvents and formulation additives like ethanol, THF, DMSO, NMP, PEG, PG, HPMC, MC, PVA, poloxamers, and cyclodextrins.
- pH, tonicity, viscosity, and partition coefficient (Log P) measurements.
- *In vitro* release studies using different methods at different dissolution media and conditions.
- *In vitro* burst studies for sustained release formulations.

Nanoparticles and Microparticles Fabrication

- Using a wide variety of synthetic and natural polymers and co-polymers for the formation of nanoparticles and microparticles like PLA, PLGA, PNIPAAm, and chitosan.
- Using various fabrication methods like salting-out, double emulsion-solvent evaporation, ionic gelation, and high shear fluidization (Microfluidizer).
- Formation of neutral and cationic particles at different particle sizes.
- Characterization of fabricated nanoparticles like particle size measurement, zeta potential measurement, yield %, loading and encapsulation efficiency %, FT-IR, DSC, and SEM.

Sublingual Tablets, Liquids, Injectables, and Ophthalmics Dosage Formulation, Manufacturing, and Quality Control:

- Formulation and development of sublingual tablets: rapidly (fast) disintegrating and/or dissolving tablets (ODT) by direct compression using various types of excipients like starch, lactose, mannitol, MCC, L-HPC, Crospovidone.
- Development of taste-masked oral and sublingual formulations
- Small scale manufacturing of tablets using single punch and rotary tablet press machines
- Quality control using USP tests like disintegration, dissolution, friability, and content uniformity tests
- Formulation and development of oral liquid formulations for adults and pediatric use
- Formulations and *in vitro* testing of pH and/or temperature-sensitive hydrogels for topical and injectable administration
- Formulation and sterilization of systemic and local small volume injections for animal administration and for proof of concept and efficacy studies
- Formulation and sterilization of various ophthalmic dosage forms for topical and local administration like eye drops' solutions, suspensions and emulsions, hydrogels, intravitreal injections, and subtenon injections

Vaccines Formulation and Drying

- Formulation and development of attenuated vaccines using different protecting agents like glycerol, trehalose, gelatine, and skim milk.
- Growing bacteria and culturing for viability testing.
- Drying the final vaccine formulation under different parameters and evaluating stability.

Sustained Release Delivery Systems Formulation

- Formulation of biodegradable injectable implants as a sustained release drug delivery systems.
- Formulation of biodegradable injectable and topical in situ-gelling hydrogels for the sustained release drug delivery like poloxamer, PLA, PEG, chitosan, and alginate.
- Formation of biodegradable nanoparticles in various dosage forms for the sustained release drug delivery.

***In Vitro*, *Ex Vivo* and *In Vivo* Studies:**

- Diffusion and permeability studies (Franz cells)
- Experimental and protocol design for animal studies (crossover, parallel)

- Proof-of-concept and dose-ranging animal studies
- Pharmacokinetics, bioavailability, bioequivalency studies
- Handling, catheterization, and blood sampling animals for *in vivo* studies, and dissecting and isolating membranes for *ex vivo studies*.

Analytical Analysis Experiences:

- Solid and liquid phase extraction
- Analytical method development and method qualification
- Intensive experience in HPLC systems (old and new Waters® systems, Agilent system, and PerkinElmer system) with UV, PDA, and EC detections
- Troubleshooting and HPLC cleaning and maintenance
- knowledgeable of LC-Mass (Waters® system)
- knowledgeable of GC-Mass (Agilent system)

Pharmacokinetics:

- Using WinNonLin software (analysing multiple profiles, noncompartmental analysis, pharmacokinetic modeling, and bioequivalence)

Laboratory Equipment

- Utilizing a wide range of laboratory equipments like speed mixer, high sheer mixer, probe ultrasonicator, bath sonicator, ultracentrifugator, speed-vac, roto-vap, glove box, freeze dryer, HPLC with UV, PDA, EC, or MS detectors, GC-MS, UV-spec, FT-IR, DSC, Zetasizer, Mastersizer, Franz cells, dissolution apparatus, disintegration apparatus, friability tester, hardness tester, blenders, tablet press (single punch and rotary), Microfluidizer

Laboratory Skills:

- Creating and maintaining safe laboratory, creating and developing SOPs, safe chemical handling and disposal, Lab Books keeping, and lab space management
- Knowledge of handling light, oxygen, and moisture-sensitive active ingredients
- Sourcing and ordering active ingredients and other laboratory chemicals and equipments.

Statistical, and Computer Skills

- Powering studies to reduce type II error
- Performing parametric statistical analysis tests like t-test (paired, non-paired, one and two tailed), ANOVA and repeated measures ANOVA (one, two, and three ways), ANCOVA, curve fitting, testing trends, and using NCSS, SPSS, and Prism statistical analysis software
- Data plotting using Auxum, Sigma Plot, and Prism
- Bibliography designing using EndNote and Reference Manager
- Microsoft Office (Word, Excel, PowerPoint)
- PubMed, IPA, Patents, and Internet searches

Consultations:

- Provided preformulation, formulation, stability and analytical testing, and drug delivery consultations.
- Hired as formulation expert witness in various pharmaceutical formulations' litigations.

Other Skills

- Grants writing and reviewing (reviewer for major organizations and institutions)
- Reviewing, evaluating, and recommending technologies for product development
- Conducting literature and patents searches
- Developing and evaluating new methods, techniques, technologies, and delivery systems
- Writing reports and protocols for extramural pharmaceutical contracts
- Training and mentoring students (PhD, PharmD, and Undergraduates) and research associates in pharmaceutical industry and academia
- Interviewing and hiring candidates to work as faculties or as research and technical assistance.

FDA, LICENCES, CONTRACTS, ND GRANTS

FDA

- 2015** **Pre-IND Filing** – Phase I waived and Phase II initiation was approved
Role: Inventor

Product Development Licenses

- 2019** **Licensing Agreement with AddMedica, Inc, Paris, France – Licensed**
Title: License Contract for US Patent Applications related to epinephrine microcrystals and nanocrystals' optimized formulation.
Role: Inventor
- 2018** **Option Agreement License Contract with Allaysis LLC, Marlton, NJ – Signed**
Title: License Contract for US Patent Applications related to Atropine Sublingual Tablet Formulation.
Role: Inventor
- 2017** **Licensing Agreement with BALTO Pharmaceuticals, Inc., South Pasadena, CA – (Declined by TTO, NSU)**
Title: License Contract for US Patent Applications related to Atropine Sublingual Tablet.
Role: Inventor
- 2016** **Licensing Agreement with Alan Lab, Inc, San Diego, CA – Licensed**
Title: License Contract for US Patent Applications related to epinephrine microcrystals.
Role: Inventor
- 2015** **Option Agreement License Contract with Alan Lab, Inc, San Diego, CA – Signed**
Title: License Contract for US Patent Applications related to epinephrine microcrystals.
Role: Inventor
- 2006** **Licensing Agreement with Verus Pharm, San Diego, CA – Licensed**
Title: License Contract for US Patent Applications # 20070059361 and 20070202163, and International Patent Applications "PCT" # PCT/CA2006/001472 and PCT/CA2008/000197 related to first generation epinephrine sublingual tablet.
Role: Inventor

Extramural Contracts

- 2019** **AddMedica, Inc, Paris, France (\$41,000) – Funded**
Title: Product Development Consultant
Role: PI
- 2018** **SanMelix Laboratories, Pembroke Pines, Florida (\$21,000) – Funded**
Title: Formulation and *in vivo* assessment of various topical formulations
Role: PI and Project Manager
- 2017** **Alan Lab, Inc, (\$20,000.00) – Funded**
Title: Formulation and *in vitro* assessment of various sublingual formulations

Role: PI and Project Manager

- 2014 Gensco Laboratories (\$41,490.00)** – (Declined by NSU administration)
Title: *In vivo* testing and analysis of two proprietary transdermal formulations
Role: PI and Project Leader
- 2013 Biologix Hair, Inc, (\$27,340.00) –Funded**
Title: Assessment of topical hair formulation
Role: PI and Project Manager

Grants

- 2021 Sheikh Hamdan Bin Rashid Al Maktoum Award for Medical Sciences, UAE – Funded (180,000 AED)**
- 2020 Operating Grant, Drug Delivery Research Group, University of Sharjah, UAE – Funded (110,000 AED)**
- 2020 Targeted Grants (PI), University of Sharjah, UAE (200,000 AED) – Funded**
- 2020 Completive Grant, University of Sharjah, UAE – Declined (200,000 AED)**
- 2020 Seed Grant, University of Sharjah, UAE (40,000 AED) - Funded**
- 2019 MOE Grants (1 PI and 3 Co-PI), UAE – Declined (7,000,000 AED)**
- 2019 Sandoq Al Watan Grant, UAE (1 Co-PI) – Pending (1,000,000 AED)**
- 2019 Operating Grant, Drug Delivery Research Group, University of Sharjah, UAE – Funded (100,000 AED)**
- 2019 Equipment Grant, Drug Delivery Research Group, University of Sharjah, UAE – Funded (750,000 AED)**
- 2018 American Foundation for Pharmaceutical Education (AFPE) Gateway (\$5,000) – not funded**
Title: Preclinical Evaluation of a Non-Invasive Pediatric formulation for the Treatment of Anaphylaxis
Role: PI
- 2018 President’s Faculty Research and Development Grant (\$15,000) - Funded**
Title: Formulation and In Vivo Evaluation of Pediatric Epinephrine Sublingual Tablet for the Treatment of Anaphylaxis
Role: PI
- 2017 President’s Faculty Research and Development Grant (\$15,000) - Funded**
Title: Optimization of Epinephrine Sublingual Tablet for Pediatric Administration
Role: PI
- 2016 Community Pharmacy Foundation (\$30,000) – not funded**
Title: Evaluation of Quality of Care Provided by Community Pharmacists for the Administration and Storage of an Epinephrine Autoinjector for the Treatment of Anaphylaxis
Role: PI
- 2015 State Pilot Grants-Miami Center for AIDS Research (\$80,000) – not funded**
Title: Development of Nanomedicine Based Targeted Anti-HIV Therapy to Eliminate HIV Reservoirs in the Brain

- Role: Co-PI
PI: Roy Upal (Florida International University)
- 2014-2015 Health Professions Division’s Grant, NSU (\$5,000) - Funded**
Title: Sublingual Absorption of Atropine as an Antidote for Organophosphates
Toxicity: Prof-of-Concept Animal Study
Role: PI
- 2014 Canadian Institutes of Health Research (CIHR) Grant (\$70,000/year, for 2 years) – not funded**
Banting Postdoctoral Fellow Training Program, Canada
Title: Nanocrystals of Epinephrine in Sublingual Tablets: A Potential Non-Invasive, First-Aid, Life-Saving Treatment of Anaphylaxis.
Role: Supervisor (PI),
Postdoctoral Trainee: Dr. Ousama Rachid
- 2013-2014 President’s Faculty Research and Development Grant (\$10,000) - Funded**
Title: Formulation and diffusion of epinephrine’s prodrug for anaphylaxis treatment
Role: PI
- 2013 (R15) NIGMS-NIH Grant (\$300,000) – not funded**
Title: Reverse Micelles as Metallodrug Stabilizing Delivery Platforms
Role: Collaborator
PI: Michael Johnson (University of New Mexico)
- 2012 (R25) NIMH-NIH Grant – not funded**
Title: Summer Research Experience
Role: Preceptor
PI: Dr. Silvia Rabionet (NSU)
- 2012 President’s Faculty Research and Development Grant (\$10,000) – not funded**
(not approved by the Dean due to limited use of animal facility space)
Title: Feasibility of Epinephrine's Prodrug for Anaphylaxis Treatment: Proof of Concept
Role: PI
- 2011-2012 Health Professions Division’s Grant, NSU (\$5,000) - Funded**
Title: *In vitro* quantification of Xylitol release from tooth wipes
Role: PI
- 2010 AACP - New Pharmacy Faculty Research Award (\$10,000) – not funded**
Title: Sublingual Epinephrine Tablets for the Non-Invasive Emergency Treatment of Anaphylaxis
Role: PI
- 2009 AACP - New Pharmacy Faculty Research Award (\$10,000) – Award put on hold due to bad economy**
Title: Sublingual Epinephrine Tablets for the Non-Invasive Emergency Treatment of Anaphylaxis
Role: PI
- 2009-2011 President’s Faculty Research and Development Grant (\$10,000) - Funded**
Title: Novel approach for the drug delivery of epinephrine for anaphylaxis
Role: PI
- 2008-2009 Health Professions Division’s Grant, NSU (\$5,000) - Funded**

Title: Sublingual epinephrine tablets for the non-invasive emergency treatment of anaphylaxis
Role: PI

2007-2008 **Natural Sciences and Engineering Research Council (NSERC) Industrial Grant (\$40,000/year for 2 years) - Funded**

Title: Ophthalmic drug formulation and delivery
Role: PI

RECOGNITIONS, SCHOLARSHIPS, AND AWARDS

Research Recognitions (NSU)

- 1) Interviewed in the [Sharjah TV](#) “Fields and Majors in the Bachelor of Pharmacy”, Sharjah, UAE (Dec 13, 2020)
- 2) Recipient of the [Research and Innovation Award](#), Ministry of Health and Prevention, UAE (February 13, 2020)
- 3) Interviewed and featured in the [Newsweek Magazine](#), as one of the **pioneers in science and technology** (Nov 21, 2019).
- 4) Recognized as **Outstanding Faculty** by Provost Ralph V. Rogers at the **NSU Board of Trustees Meeting** (April 17, 2017).
- 5) Featured on various **national news channels** including [WPLG-Local10 TV](#) (FL), [KFSN-ABC 30 TV](#) (CA), [Waay-31 abc TV](#) (AL), [WKBT-News 8 TV](#) (WI), [WNDU-16 NBC TV](#) (IN), [Click2Houston TV](#) (TX), [WJRT-ABC12 TV](#) (MI), [NBC-DFW 5 TV](#) (TX), [KFDX 3 TV](#) (TX), [WTJA TV](#) (PA), [WFMZ-69 News TV](#) (PA, NJ) and [Ivanhoe Broadcast News](#).
- 6) Featured in [CNBC](#), [Life Sciences South Florida](#), [Popular Sciences](#), [Digital Trends](#), [Snack Safely](#), [My Kid's Food Allergies](#), [Trend Hunter Tech](#), [Biospace](#), [Extreme Tech](#), [Trigger Allergy](#), [WeAreGreenBay](#), [ZME Science](#), and NSU Realizing Potential Newsletter
- 7) Recognized for [Excellence in Research](#) during the **Celebration of Excellence**, Nova Southeastern University (Jan 28, 2017).
- 8) Invited as a speaker during the [NSU Ambassadors Board](#), Nova Southeastern University (Feb 9, 2017)
- 9) Recognized for entering into **License Agreement** for Epinephrine Tablet by various NSU administrators (2016).
- 10) Poster was selected for the [best poster award \(3rd place\)](#) during the **126th Florida Pharmacy Association Annual Meeting and Convention**, Fort Lauderdale, FL (June 30-July 3, 2016)
- 11) Recognized as **Outstanding Faculty** by Provost Ralph V. Rogers at the **NSU Board of Trustees Meeting** (Nov 16, 2015).
- 12) **Pre-IND filling and meeting with FDA** was recognized during the Department Meeting by College of Pharmacy Dean, Associate Dean for Research, and Department Chair (Oct 14, 2015).
- 13) **External funding was recognized by President George Hanbury** during the 2014 External Funding Recognition Reception, Nova Southeastern University (Oct 21, 2014)
- 14) Poster was **selected for the best poster award (1st place)** during the Manitoba Society of Pharmacists Annual Conference, Winnipeg, Manitoba, Canada (April 25-27, 2014)
- 15) Abstract was **selected for a featured poster presentation** as the “[Best of Food Allergy, Anaphylaxis, Dermatology and Drug Allergy \(FADDA\)](#)” by the Review Committee of the American Academy of Allergy, Asthma & Immunology (AAAAI) Annual Meeting Program, San Diego, CA (Feb 28- Mar 4, 2014)
- 16) **Recognized by President George Hanbury**, President of Nova Southeastern University, during the **Annual Faculty Reception** (October 2013).
- 17) Research project and inventions were **featured in Research and Technology Transfer Office Annual Report**, Nova Southeastern University (**2011 – present**)

- 18) Research and mentorship activities were **featured in *Florida Pharmacy Today*, 2013**, 76 May (5): 17. Official publication of the Florida Pharmacy Association
- 19) **Selected for Grant Writing Workshop** sponsored by National Institute of General Medical Sciences (NIMGS) at **National Institutes of Health (NIH)**, University of Kentucky (2012).
- 20) Selected for the **front page of the Research and Technology Transfer Office Annual Report**, Nova Southeastern University (2011)
- 21) **Featured in *Florida Trend magazine's* research issue (2011).**

Teaching Awards (NSU)

- 22) **Nominated for Student Life Achievement Award** at the university level by the College of Pharmacy Awards Committee, Nova Southeastern University (2014).
- 23) Selected the **Professor of the Year**, College of Pharmacy Awards Committee, Nova Southeastern University (2014).
- 24) **Nominated for the Golden Apple Award**, College of Pharmacy, Nova Southeastern University to be recognized at the American Association of Colleges of Pharmacy (2010).
- 25) The **Best Teacher Award** for the first year pharmacy students, College of Pharmacy, Nova Southeastern University (2010).

Postdoctoral Fellowship Award

- 26) Natural Sciences and Engineering Research Council (**NSERC**) **Industrial Postdoctoral Fellowship** (2007) (\$40,000/year for 2 years).

Ph.D. Graduate Awards

2006

- 27) Manitoba Health Research Council (**MHRC**) Award (**\$16,000.00 CAD**).
- 28) The Canadian Foundation for Pharmacy (**CFP**) **National Best Poster Award**.
- 29) **Strategic Training in Allergy Research (ST*AR) Award** - American Academy of Allergy, Asthma & Immunology's (**AAAAI**) ST*AR Program – March 3-7, 2006, Miami Beach, FL.
- 30) AAPS-UManitoba Pharmacy Student Chapter Research Abstract Competition Award (\$100.00 CAD).
- 31) Manitoba Institute of Child Health (MICH) Travel Award (\$1,400.00 CAD)
- 32) University of Manitoba Graduate Students Association (UMGSA) Conference Travel Grant (\$200.00 CAD).
- 33) University of Manitoba Student Union (UMSU) Travel Award (\$200.00 CAD).
- 34) The Alumni Association Inc. of The University of Manitoba Conference Travel Grant (\$140.00 CAD).

2005

- 35) Manitoba Health Research Council (**MHRC**) Studentship Award (**\$16,000.00 CAD**).
- 36) Manitoba Institute of Child Health (MICH) Travel Award (\$1,400.00 CAD).
- 37) University of Manitoba Graduate Student Conference Travel Award (\$500.00 CAD).
- 38) University of Manitoba Student Union (UMSU) Travel Award (\$200.00 CAD).
- 39) University of Manitoba Graduate Students Association (UMGSA) Conference Travel Grant (\$200.00 CAD).

40) The Alumni Association Inc. of The University of Manitoba Conference Travel Grant (\$140.00 CAD).

2004

41) **Honourable Mention**-The Manitoba Health Research Council (**MHRC**) Poster Competition, Faculty of Medicine, University of Manitoba.

42) University of Manitoba Graduate Fellowship (**UMGF**) Award (**\$14,000.00 CAD**).

43) Manitoba Pharmaceutical Association (**MPhA**) Graduate Scholarship (**\$2,000.00 CAD**).

44) University of Manitoba Student Union (UMSU) Scholarship Award (\$200.00 CAD).

45) Manitoba Institute of Child Health (MICH) Travel Award (\$1,400.00 CAD).

46) University of Manitoba Graduate Student Conference Travel Award (\$200.00 CAD).

47) University of Manitoba Student Union (UMSU) Travel Award (\$200.00 CAD).

48) University of Manitoba Bursary (\$2000.00 CAD).

2003

49) Manitoba Institute of Child Health (**MICH**) Graduate Award (**\$16,000.00 CAD**).

50) University of Manitoba Bursary (\$2000.00 CAD).

2002

51) University of Manitoba Graduate Fellowship (**UMGF**) Award (**\$14,000.00 CAD**).

52) University of Manitoba Bursary (\$2000.00 CAD).

2001

53) Manitoba Institute of Child Health (**MICH**) Graduate Award (**\$16,000.00 CAD**).

F. Hoffmann La-Roche Awards (1996-2000)

54) The Pharma International Award of Excellence, Basel, Switzerland (1997).

55) Winner - Territory Management Simulation, Riyadh, Saudi Arabia (1997).

56) Product Champion in marketing Glucagon® (2000), Rocephin® (2000), Tilcotil® (1999), Coreg® (1999), and Bactrim® (1996), Riyadh, Saudi Arabia.

57) Product Runner-Up in marketing Rocephin® (1999), Manerix® (1996), and Dormicum® (1996), Riyadh, Saudi Arabia.

Pharmacy Graduate Awards (1994-1995)

58) **Academic Excellence Award**, King Saud University, Riyadh, Saudi Arabia (1994-1995).

59) **Student Fund Award**, King Saud University, Riyadh, Saudi Arabia (1995) (**\$1000.00 SAR**).

60) Pharmaceutical Industries & Medical Appliances Corporation (**SPIMACO**) Training Award, Saudi Arabia (1995) (**\$2000.00 SAR**).

PATENTS

Group 12 (NSU18-05): Optimization of Epinephrine Sublingual Permeability

1. **Rawas-Qalaji MM**. Sublingual Epinephrine Compositions Including pH-Modifying Excipients and Penetration Enhancers and Methods for Use Thereof. **US Provisional Patent Appl # 62/748,117**. Filed October 19, 2018.
2. **Rawas-Qalaji MM**. Sublingual Epinephrine Compositions Including pH-Modifying Excipients and Penetration Enhancers and Methods for Use Thereof. [International Patent Pub \(WIPO\) # WO/2020/081952 A1](#) (PCT/US19/56967). Filed October 18, 2019 and **published April 23, 2020**.
3. **Rawas-Qalaji MM**. Sublingual Epinephrine Compositions Including pH-Modifying Excipients and Penetration Enhancers and Methods for Use Thereof. Canadian Patent Pub (CIPO) # CA3116730 A1. Filed October 18, 2019 and **published August 9, 2017**.
4. **Rawas-Qalaji MM**. Sublingual Epinephrine Compositions Including pH-Modifying Excipients and Penetration Enhancers and Methods for Use Thereof. Japanese Patent Office (JPO) # 2021-521216 (PCT/US19/56967). Filed April 16, 2021.
5. **Rawas-Qalaji MM**. Sublingual Epinephrine Compositions Including pH-Modifying Excipients and Penetration Enhancers and Methods for Use Thereof. Korean Patent Office (KPO) # 10-2021-7014434 (PCT/US19/56967). Filed May 13, 2021.
6. **Rawas-Qalaji MM**. Sublingual Epinephrine Compositions Including pH-Modifying Excipients and Penetration Enhancers and Methods for Use Thereof. European Patent Pub (EPO) # EP19 872 893.3 (PCT/US19/56967). Filed May 10, 2021.

Group 11 (NSU 16-01): Formulation Optimization and Diffusion Evaluation of Rapidly Disintegrating Sublingual Atropine Sulfate Tablets (2nd Generation)

7. **Rawas-Qalaji MM**, Bafail R. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. **US Provisional Patent Appl # 62/383,115**. Filed September 2, 2016.
8. **Rawas-Qalaji MM**, Bafail R. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. [International Patent Pub \(WIPO\) # WO/2018/045367](#) (Appl No PCT/US2017/050030). Filed September 5, 2017 and **published March 8, 2018**.
9. **Rawas-Qalaji MM**, Bafail R. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets of Improved Formulation, Methods for Manufacture Thereof, and Methods for Treatment of Acute Organophosphate Toxicity. [US Patent Pub \(USPTO\) # US2019/0247296 A1](#) (Appl No 16329299). Filed September 5, 2017 and **published August 15, 2019**.

Group 10 (NSU 15-12): Formulation and Evaluation of Cobalamin Composition for Improving Cognitive Function in Humans

10. **Rawas-Qalaji MM**, Deth R. Cobalamin Composition and Use Thereof for Improving Cognitive Function in Humans. **US Provisional Patent Appl # 62/301,876**. Filed March 1, 2016.
11. **Rawas-Qalaji MM**, Deth R. Cobalamin Composition and Use Thereof for Improving Cognitive Function in Humans. [International Patent Pub \(WIPO\) # WO/2017/151723](#)

(Appl No PCT/US2017/020125), Filed March 1, 2017 and **published September 8, 2017**.

12. **Rawas-Qalaji MM**, Deth R. Cobalamin Composition and Use Thereof for Improving Cognitive Function in Humans. [US Patent Pub \(USPTO\) # US2019/0030061 A1](#) (Appl No 16/081,111). Filed March 1, 2017 and **published January 31, 2019**.

Group 9 (NSU 14-09): (a) Formulation and Characterization of 1st Generation Rapidly Disintegrating Sublingual Atropine Sulfate Tablets (b) Diffusion Studies of Rapidly Disintegrating Sublingual Atropine Sulfate Tablets (1st Generation)

13. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. **US Provisional Patent Appl (UPSTO) # 62/058722**. Filed October 2, 2014.
14. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. [International Patent Pub \(WIPO\) # WO/2016/054504](#) (Appl No PCT/US2015/053713). Filed October 2, 2015 and **published July 4, 2016**.
15. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. [US Patent Pub \(USPTO\) # US2017/0246158](#) (Appl No 15516444). Filed April 3, 2017 **published Aug 31, 2017**.
16. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. [European Patent Pub \(EPO\) # EP3200793](#) (Appl No 15847897.4). Filed April 12, 2017 and **published August 9, 2017**.
17. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. [Canadian Patent Pub \(CIPO\) # CA2963525](#). Filed April 12, 2017 and **published August 9, 2017**.
18. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. [European Patent Pub \(EPO\) # EP3200793 B1](#) (Appl No 15847897). Filed October 2, 2015 and **Granted August 28, 2019. (Issued Patent)**
19. **Rawas-Qalaji MM**, Aodah AH. Comprimidos sublinguales de disgregación rápida de sulfato de atropina, métodos para su fabricación, y métodos para su uso en el tratamiento de toxicidad aguda por organofosforados. [Spain Patent Pub \(OEPM\) # 2750752](#) (Appl No 15847897), Filed October 2, 2015 and **published March 27, 2020. (Issued Patent)**.
20. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. United Kingdom Patent Office [# EP3200793 B1](#) (Appl No 15847897). Filed October 2, 2015 and **Renewed October 19, 2020. (Issued Patent)**
21. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment

of Acute Organophosphate Toxicity. France Patent Office # [EP3200793 B1](#) (Appl No 15847897). Filed October 2, 2015 and **Renewed October 5, 2020. (Issued Patent)**

22. **Rawas-Qalaji MM**, Aodah AH. Atropine Sulfate Rapidly-Disintegrating Sublingual Tablets, Methods for Manufacture Thereof, and Methods for Use Thereof for Treatment of Acute Organophosphate Toxicity. Italy Patent Office [European Patent Pub \(EPO\) # EP3200793 B1](#) (Appl No 15847897). Filed October 2, 2015 and **Renewed October 5, 2020. (Issued Patent)**

Group 8 (NSU13-03-04): (a) In vitro/Ex vivo Diffusion Studies of Rapidly Disintegrating Sublingual Epinephrine Nanocrystals Tablets (3rd Generation) and (b) Bioavailability and Absorption Studies of Rapidly Disintegrating Sublingual Epinephrine Nanocrystals Tablets (3rd Generation)

23. **Rawas-Qalaji, MM**, Rachid, OM, Simons, KJ, Simons, ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. **US Provisional Patent Appl (UPSTO) # 61/804,892**. Filed March 25, 2013.
24. **Rawas-Qalaji, MM**, Rachid, OM, Simons, KJ, Simons, ER. Epinephrine Fine particles and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [International Patent Pub \(WIPO\) # WO/2014/153559](#) (Appl No PCT/US14/31579). Filed March 24, 2014 and **published September 25, 2014**.
25. Rawas-Qalaji MM, Rachid OM, Simons KJ, Simons ER. Epinephrine Fine particles and Methods for Use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US2016/0045457](#) (Appl No 14/778,887). Filed September 21, 2015 and **published February 18, 2016**.
26. Rawas-Qalaji MM, Rachid OM, Simons KJ, Simons ER. Epinephrine Fine particles and Methods for Use Thereof for Treatment of Conditions Responsive to Epinephrine. [European Patent Pub \(EPO\) # EP2976072](#) (Appl No 14768584). Filed March 24, 2014 and **published January 27, 2016**.
27. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER Epinephrine Fine particles and Methods for Use Thereof for Treatment of Conditions Responsive to Epinephrine. [Canadian Patent Pub \(CIPO\) # CA2907770](#) (Appl No 2,907,770). Filed March 24, 2014 and **published January 27, 2016**.
28. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Fine particles and Methods for Use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US2017/0020827](#) (Appl No 15/288,745). Filed October 17, 2016 and **published January 26, 2017**.
29. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Methods for Use of Epinephrine Fine Particles for Treatment of Conditions Responsive to Epinephrine. US Patent (USPTO) # [US 10,159,656 B2](#) (Appl No 15/288,745). Filed October 17, 2016 and **Issued December 25, 2018. (Issued Patent)**.
30. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Microcrystals and Methods for Use Thereof. [US Patent Pub \(USPTO\) # US2019/0125698 A1](#) (Appl No 16/225,609). Filed December 19, 2018 and **published May 02, 2019**.

Group 7: Bioavailability and Absorption Studies of Rapidly Disintegrating Sublingual Epinephrine Nanocrystals Tablets (3rd Generation)*

31. **Rawas-Qalaji, MM**, Rachid, OM, Simons, KJ, Simons, ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. **US Provisional Patent Appl (UPSTO) # 61/804,519**. Filed March 22, 2013.

Group 6 (NSU13-01): (a) Optimization of Epinephrine Nanocrystals Fabrication (b) Bioavailability and Absorption Studies for 2nd Generation Taste-Masked Rapidly Disintegrating Sublingual Epinephrine Tablets and (c) Sublingual Epinephrine Tablets long-Term Stability Studies

32. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. **US Provisional Patent Appl (UPSTO) # 61/660,273**. Filed June 15, 2012.
33. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [International Patent Pub \(WIPO\) # WO/2014/007972](#) (Appl No PCT/US13/45836). Filed June 14, 2013 and **published January 9, 2014**.
34. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US2015/0164827](#) (Appl No 14/408,038). Filed December 15, 2014 and **published June 18, 2015**.
35. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [European Patent Pub \(EPO\) # EP2861224](#) (Appl No 13812628). Filed June 14, 2013 and **published April 22, 2015**.
36. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [Canadian Patent Pub \(CIPO\) # CA2876883](#) (Appl No 2,876,883). Filed June 14, 2013 and **published April 22, 2015**.
37. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Sublingual Compositions Including Epinephrine Nanoparticles. [US Patent Pub \(USPTO\) # US2016/0374966](#) (Appl No 15/262,961). Filed September 12, 2016 and **Published December 29, 2016**.
38. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Sublingual Compositions Including Epinephrine Nanoparticles. [US Patent \(USPTO\) #10,251,849 B2](#) (Appl No 15/262,961). Filed September 12, 2016 and **Issued April 9, 2019. (Issued Patent)**
39. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US2019/0231716](#) (Appl No 16/377,810). Filed April 08, 2019 and **published August 01, 2019**.

Group 5 (NSU11-12): (a) Formulation and Characterization of 2nd Generation Taste-Masked Rapidly Disintegrating Sublingual Epinephrine Tablets* and (b) Fabrication of Chitosan Nanoparticles Loaded with Epinephrine

40. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. **US Provisional Patent Application # 61/550,359**, Filled October 21, 2011.

41. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [International Patent Pub \(WIPO\) # WO 2013/059629](#) (Appl No PCT/US12/61074). Filled October 19, 2012 and **published April 25, 2013**.
42. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US 2014/0242177](#) (Appl No 14/353,118). Filled April 21, 2014 and **published August 28, 2014**.
43. Rawas-Qalaji MM, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [European Patent Pub \(EPO\) # EP2753321](#) (Appl No 12842206). Filled April 21, 2014 and **published July 16, 2014**. (**Letter of Allowance issued May 12, 2021**)
44. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [Canadian Patent Pub \(CIPO\) # CA2853084](#) (Appl No 2,853,084). Filled April 22, 2014 and **published July 16, 2014**.
45. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US2017/0000735](#) (Appl No 15/266,834). Filled September 15, 2016 and **published January 05, 2017**.
46. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent \(USPTO\) # US 9,877,921 B2](#) (Appl No 15/266,834). Filled September 15, 2016 and **Issued January 30, 2018**. (**Issued Patent**).
47. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US2018/0147145](#) (Appl No 15/882,399). Filled January 29, 2018 and **published May 31, 2018**.
48. **Rawas-Qalaji MM**, Rachid OM, Simons KJ, Simons ER. Epinephrine Nanoparticles Encapsulated with Chitosan and Tripolyphosphate, Methods of Fabrication Thereof, and Methods for use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US 10,568,836 B2](#) (Appl No 15/882,399). Filled January 29, 2018 and **Issued Feb 25, 2020**. (**Issued Patent**).

Group 4 (NSU10-01): Preliminary Epinephrine Nanocrystals Fabrication and Diffusion Studies

49. **Rawas-Qalaji MM**, Nieves E., Simons KJ, Simons ER, Rachid OM. Composition and Method for Emergency Treatment of Anaphylaxis. **US Provisional Patent Appl (UPSTO) # 61/309,136**. Filled March 1, 2010.
50. **Rawas-Qalaji MM**, Nieves E., Simons KJ, Simons ER, Rachid OM. Epinephrine Nanoparticles, Methods of Fabrication Thereof, and Methods for Use Thereof for Treatment of Conditions Responsive to Epinephrine. [International Patent Application \(WIPO\) # WO 2011/109340](#) (Appl No PCT/US11/26604). Filled March 1, 2011 and **published September 9, 2011**.

51. **Rawas-Qalaji M.M.**, Nieves E., Simons K.J., Simons E.R, Rachid O.M. Epinephrine Nanoparticles and Methods of Fabrication Thereof, and Methods for Use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US 2012/0322884](#) (Appl No 13/582,346). Filed August 31, 2012 and **published December 20, 2012**.
52. **Rawas-Qalaji M.M.**, Simons K.J, Simons E.R, Rachid O.M, Nieves E. Epinephrine Nanoparticles and Methods of Fabrication Thereof, and Methods for Use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US 2017/0071881](#) (Appl No 15/358,743). Filed November 22, 2016 and **published March 16, 2017**.
53. **Rawas-Qalaji M.M.**, Simons K.J, Simons E.R, Rachid O.M, Nieves E. Epinephrine Nanoparticles and Methods of Fabrication Thereof, and Methods for Use Thereof for Treatment of Conditions Responsive to Epinephrine. [US Patent Pub \(USPTO\) # US 10,682,316 B2](#) (Appl No 15/358,743). Filed November 22, 2016 and **Issued June 16, 2020. (Issued Patent)**.

Group 3: Novel Dissolution Apparatus for Sublingual Tablets

54. Rachid OM, **Rawas-Qalaji MM**, Simons ER, Simons KJ. Novel Dissolution Apparatus Designed to Evaluate Sublingual Tablets. **US Provisional Patent Appl (UPSTO)**. Filed Nov 1, 2008.

Group 2: Bioavailability and Absorption Studies for 1st Generation Rapidly Disintegrating Sublingual Epinephrine Tablets (licensed to Verus Pharma)

55. **Rawas-Qalaji MM**, Simons KJ, Gu X, Simons ER. Fast-Disintegrating Epinephrine Tablets for Buccal or Sublingual Administration. **US Provisional Patent Appl (UPSTO) # 60/759,039**. Filed Jan. 17, 2006.
56. **Rawas-Qalaji MM**, Simons KJ, Gu X, Simons ER. Fast-Disintegrating Epinephrine Tablets for Buccal or Sublingual Administration. [US Patent Pub \(USPTO\) # US 2007/0202163](#) (Appl No 11672503). Filed Feb. 7, 2007 and **published August 30, 2007**.
57. **Rawas-Qalaji MM**, Simons KJ, Gu X, Simons ER. Fast-Disintegrating Epinephrine Tablets for Buccal or Sublingual Administration. [International Patent Pub \(WIPO\) # WO 2008/095284](#) (Appl No PCT/CA2008/000197), Filed Jan. 31, 2008 and **published August 14, 2008**.

Group 1: Formulation and Characterization of 1st Generation Rapidly Disintegrating Sublingual Epinephrine Tablets (licensed to Verus Pharma)

58. **Rawas-Qalaji MM**, Simons KJ, Gu X, Simons ER. Fast-Disintegrating Epinephrine Tablets for Buccal or Sublingual Administration. **US Provisional Patent Appl (UPSTO) # 60/715,180**. Filed Sep. 9, 2005.
59. **Rawas-Qalaji MM**, Simons KJ, Gu X, Simons ER. Fast-Disintegrating Epinephrine Tablets for Buccal or Sublingual Administration. [US Patent Pub \(USPTO\) # US 2007/0059361](#) (Appl No 11530360). Filed Sep. 8, 2006 and **published March 15, 2007**.
60. **Rawas-Qalaji MM**, Simons KJ, Gu X, Simons ER. Fast-Disintegrating Epinephrine Tablets for Buccal or Sublingual Administration. [International Patent Pub \(WIPO\) # WO 2007/028247](#) (Appl No PCT/CA2006/001472). Filed Sep. 8, 2006 and **published March 15, 2007**.

61. **Rawas-Qalaji MM**, Simons KJ, Gu X, Simons ER. Fast-Disintegrating Epinephrine Tablets for Buccal or Sublingual Administration. [Taiwan Patent Pub \(TIPO\) # TW 2008/00142](#) (Appl No PCT/CA2006/001472). Filed Sep. 8, 2006 and **published January 01, 2008**.

PEER-REVIEWED RESEARCH & PUBLICATIONS

A. Published Peer-Reviewed Articles:

1. Rawas-Qalaji M, Bafail R, Cagliani R; Haider M, Hussain Z. Assessment of Epinephrine Sublingual Stability and Permeability Pathways to Enhance Its Permeability for the Treatment of Anaphylaxis. *Eur. J. Pharm. Sci.* (Accepted with minor revision)
2. Rawas-Qalaji M, Bafail R, Ahmed IS, Uddin MN, Nazzal S. Modulation of the sublingual microenvironment and pH-dependent transport pathways to enhance atropine sulfate permeability for the treatment of organophosphates poisoning. [Int J Pharm 2021; 606:120898](#) PMID: 34310952. doi: 10.1016/j.ijpharm.2021.120898.
3. Hussain Z, Abdur Rahim M, Jan N, Shah H, Rawas-Qalaji M, Khan S, Sohail M, Ei Thu H, Ramli NA, Sarfraz RM, Abourehab M. Cell membrane cloaked nanomedicines for bio-imaging and immunotherapy of cancer: Improved pharmacokinetics, cell internalization and anticancer efficacy. [J Control Release 2021;S0168-3659\(21\)00234-0](#). doi: <https://doi.org/10.1016/j.jconrel.2021.05.018>
4. Alozi M, Rawas-Qalaji M. Treating organophosphates poisoning: management challenges and potential solutions. [Crit Rev Toxicol. 2020 Nov 13;1-16](#). PMID: 33185501. doi: 10.1080/10408444.2020.1837069.
5. Hamdy R, Fayed B, Hamoda AM, Rawas-Qalaji M, Haider M, Soliman SSM. Essential Oil-Based Design and Development of Novel Anti-Candida Azoles Formulation. [Molecules 2020; 25\(6\):1463](#). PMID: 32213931. doi: <https://doi.org/10.3390/molecules25061463>
6. Bafail R[§], **Rawas-Qalaji MM[&]**, Rawas-Qalaji M, Aodah AH[§]. Effect of the Filler Grade on the Characteristics and the Sublingual Permeability of Atropine Sulfate Fast Disintegrating Sublingual Tablets. [Drug Dev Ind Pharm. 2019; 45\(10\):1617-1623](#). PMID: 31353966. DOI: <https://doi.org/10.1080/03639045.2019.1648499>.
7. Aodah AH[§], Rawas-Qalaji M, Bafail R[§], **Rawas-Qalaji MM[&]**. Effect of Fast-Disintegrating Tablets' Characteristics on the Sublingual Permeability of Atropine Sulfate for the Potential Treatment of Organophosphates Toxicity. [AAPS PharmSciTech. 2019 Jun 21;20\(6\):229](#). PMID: 31227930. DOI: <https://doi.org/10.1208/s12249-019-1420-1>
8. Yamada C, Beron-Pelusso C, Algazzaz N, Heidari A, Luz D, **Rawas-Qalaji M**, Toderas I, Mascarenhas AK, Kawai T, Movila A. Age-dependent effect between MARCO and TLR4 on PMMA particle phagocytosis by macrophages. [J Cell Mol Med. 2019 Aug;23\(8\):5827-5831](#). PMID: 31225947. DOI: <https://doi.org/10.1111/jcmm.14494>.
9. Rachid OM, Simons KJ, **Rawas-Qalaji MM[&]**. In Vivo Evaluation of Taste-Masked Fast-Disintegrating Sublingual Tablets of Epinephrine Microcrystals. [AAPS PharmSciTech 2018; Nov;19\(8\):3886-3894](#). PMID: 30324360. DOI: <https://doi.org/10.1208/s12249-018-1171-4>.
10. Rachid OM[&], **Rawas-Qalaji MM[&]**, Simons KJ. Epinephrine in anaphylaxis: Preclinical study of pharmacokinetics after sublingual administration of taste-masked tablets for

- potential pediatric use. [Pharmaceutics 2018;10\(1\):24](#). PMID: 29439456. DOI: <https://doi.org/10.3390/pharmaceutics10010024>
11. Aodah AH[§], Bafail R[§], **Rawas-Qalaji MM[&]**. Formulation and Evaluation of Fast-Disintegrating Sublingual Tablets of Atropine Sulfate: the Effect of Tablet Dimensions and Drug Load on Tablet Characteristics. [AAPS PharmSciTech 2017;18\(5\):1624-1633](#) PMID: 27650282. DOI: <https://doi.org/10.1208/s12249-016-0631-y>
 12. Rachid OM, Simons ER, **Rawas-Qalaji MM**, Lewis S*, Simons KJ. Epinephrine doses delivered from auto-injectors stored at excessively high temperatures. [Drug Dev Ind Pharm 2016;42\(1\):131-5](#). PMID: 25997362. DOI: <https://doi.org/10.3109/03639045.2015.1035283>
 13. **Rawas-Qalaji MM[&]**, Werdy SH*, Rachid OM, Simons KJ, Simons ER. Sublingual Diffusion of Epinephrine Microparticles from Rapidly Disintegrating Tablets for the Potential First-Aid Treatment of Anaphylaxis: *In Vitro* and *Ex Vivo* Study. [AAPS PharmSciTech 2015; 16\(5\): 1203-12](#). PMID: 25732373. DOI: <https://doi.org/10.1208/s12249-015-0306-0>.
 14. Rachid OM, Simons ER, Wein MB, **Rawas-Qalaji MM**, Simons KJ. Epinephrine Doses Contained in Outdated Epinephrine Auto-Injectors Collected in a Florida Allergy Practice. [Ann Allergy Asthma Immunol. 2015; 114\(4\):354-356](#). PMID: 25707326. DOI: <https://doi.org/10.1016/j.anai.2015.01.015>
 15. Rachid OM, Simons ER, **Rawas-Qalaji MM**, Lewis S*, Simons KJ. Epinephrine Autoinjectors: Does Freezing or Refrigeration Affect Epinephrine Dose Delivery and Enantiomeric Purity? [J Allergy Clin Immunol Pract 2015; 3\(2\):294-6](#). PMID: 25609348. DOI: <https://doi.org/10.1016/j.jaip.2014.11.015>.
 16. **Rawas-Qalaji MM[&]**, Rachid OM, Mendez BA*, Losada A*, Simons ER, Simons KJ. Adrenaline (Epinephrine) Microcrystal Sublingual Tablet Formulation: Enhanced Absorption in a Preclinical Model. [J Pharm Pharmacol 2015; 67\(1\):20-5](#). PMID: 25256073. DOI: <https://doi.org/10.1111/jphp.12312>.
 17. Alayoubi A[§], Abu-Fayyad A[§], **Rawas-Qalaji MM**, Sylvester P, Nazzal S. Effect of Lipid Viscosity and High-Pressure Homogenization on The Physical Stability of “Vitamin E” Enriched Emulsion. [Pharm. Dev. Technol. 2015; 20\(5\):555-61](#). PMID:24621375. DOI: <https://doi.org/10.3109/10837450.2014.898655>.
 18. **Rawas-Qalaji MM[&]**, Rachid OM, Simons KJ, Simons ER. Long-Term Stability of Epinephrine Sublingual Tablets for the Potential First-Aid Treatment of Anaphylaxis. [Ann Allergy Asthma Immunol. 2013;111:567-79](#). PMID: 24267371. DOI: <https://doi.org/10.1016/j.anai.2013.09.005>.
 19. Rachid OM, **Rawas-Qalaji MM**, Simons FER, Simons KJ. Epinephrine (Adrenaline) Absorption from New-Generation, Taste-Masked Sublingual Tablets: A Preclinical Study. [J Allergy Clin Immunol. 2013;131\(1\):236-8](#). PMID:23177259. DOI: <https://doi.org/10.1016/j.jaci.2012.10.016>.
 20. Rachid OM, **Rawas-Qalaji MM**, Simons FER, Simons KJ. Rapidly-disintegrating sublingual tablets of epinephrine: role of non-medicinal ingredients in formulation development. [Eur J Pharm Biopharm. 2012 Jun 7;82\(3\):598-604](#). PMID: 22683694. DOI: <https://doi.org/10.1016/j.ejpb.2012.05.020>.
 21. **Rawas-Qalaji MM[&]**, Williams C*. Advances in Ocular Drug Delivery. [Curr Eye Res. 2012; 37\(5\):345-356](#). PMID: 22510004. DOI: <https://doi.org/10.3109/02713683.2011.652286>.

22. Rachid OM, **Rawas-Qalaji MM**, Simons FER, Simons KJ. Dissolution Testing of Sublingual Tablets: A Novel In Vitro Method. [AAPS PharmSciTech. 2011 Jun;12\(2\):544-52](#). PMID: 21523516. DOI: <https://doi.org/10.1208/s12249-011-9615-0>.
23. Rachid OM, Simons FER, **Rawas-Qalaji MM**, Simons KJ. An Electronic Tongue: Evaluation of the Masking Efficacy of Sweetening and/or Flavoring Agents on the Bitter Taste of Epinephrine. [AAPS PharmSciTech. 2010 Jun;11\(2\):550-7](#). PMID: 20352537. DOI: <https://doi.org/10.1208/s12249-010-9402-3>.
24. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Long-Term Stability of Epinephrine Dispensed in Unsealed Syringes for the First-Aid Treatment of Anaphylaxis. [Ann Allergy Asthma Immunol. 2009;102\(6\):500-503](#). PMID: 19558009. DOI: [https://doi.org/10.1016/S1081-1206\(10\)60124-X](https://doi.org/10.1016/S1081-1206(10)60124-X)
25. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Fast-Disintegrating Sublingual Tablets: Effect of Tablet Dimensions on Tablet Characteristics. [Drug Dev Ind Pharm. 2007;33\(5\):523-530](#). PMID: 17520443. DOI: <https://doi.org/10.1080/03639040600897150>.
26. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Epinephrine for the Treatment of Anaphylaxis: Do all 40 mg Sublingual Epinephrine Tablet Formulations with Similar *In Vitro* Characteristics have the Same Bioavailability?. [Biopharm Drug Dispos. 2006;27\(9\):427-435](#). PMID: 17009337. DOI: <https://doi.org/10.1002/bdd.519>.
27. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Fast-Disintegrating Sublingual Tablets: Effect of Epinephrine Load on Tablet characteristics. [AAPS PharmSciTech. 2006;7\(2\): E41](#) (Article Number 41). PMID: 16796358. DOI: <https://doi.org/10.1208/pt070241>.
28. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Sublingual Epinephrine Tablets Versus Intramuscular Injection of Epinephrine: Dose Equivalence for Potential Treatment of Anaphylaxis. [J Allergy Clin Immunol. 2006; 117\(2\):398-403](#). PMID: 16461140. DOI: <https://doi.org/10.1016/j.jaci.2005.12.1310>.

B. Published Book Chapters

1. Ousama Rachid, Mutasem Rawas-Qalaji and Keith J. Simons. Epinephrine in Anaphylaxis: Preclinical Study of Pharmacokinetics after Sublingual Administration of Taste-Masked Tablets for Potential Pediatric Use. In: Neal M. Davies and Kishor M. Wasan (Eds.). [Pharmacokinetics and Drug Metabolism in Canada: The Current Landscape](#). Basel, Switzerland: MDPI Books; (March) 2018. ISBN 978-3-03842-797-1 (Pbk); ISBN 978-3-03842-798-8 (PDF). DOI: 10.3390/books978-3-03842-798-8

C. Abstracts and Poster Presentations:

1. Mutasem Rawas-Qalaji, Rawan Bafail. The Combined Effect of Modifying the Microenvironment's pH and a Penetration Enhancer on Enhancing the Sublingual Permeability of Epinephrine, AAPS PharmSci 360, Philadelphia, PA, USA, October 17-20, 2021 (Accepted)
2. Maria Mustafa Alozi[§], Roberta Cagliani, Mutasem Rawas-Qalaji. Fabrication and Process Optimization of Epinephrine-Loaded Chitosan Nanoparticles, AAPS PharmSci 360, Philadelphia, PA, USA, October 17-20, 2021 (Accepted)
3. Maria Mustafa Alozi[§], Jayalakshmi Jagal, Mutasem Rawas-Qalaji. Chitosan Nanoparticles as Drug Carriers for the Sustained Release of Epinephrine, AAPS

PharmSci 360, Philadelphia, PA, USA, October 17-20, 2021 (Accepted)

4. Lamia Al-Ali[§], Mutasem Rawas-Qalaji. Evaluation of the Quality of Locally and Regionally Manufactured Generic Pharmaceutical Products in the United Arab Emirates Market, AAPS PharmSci 360, Philadelphia, PA, USA, October 17-20, 2021 (Accepted)
5. Luz D, Heidari A, Rawas-Qalaji MM, Movila A, Yamamoto K, Yamada C, Antonson S, Vardar-Sengul S, Hernandez M, Kawai T. Measurements of Sizes and Charges of Particles Released from Titanium Implants by Ultrasonic Scaling. [Academy of Osseointegration's 34th Annual Meeting \(P113\)](#), 2019 Washington, DC (March 13 - 16) **selected the finalists for the E-Poster awards**
6. Bafail R[§], **Rawas-Qalaji MM[&]**. Effect of Penetration Enhancers on Sublingual Permeability of Epinephrine. [AAPS 2018 \(M1230-10-078\)](#) – Washington, DC (Nov. 4-7)
7. Bafail R[§], **Rawas-Qalaji MM[&]**. Evaluation of the Sublingual pH-Permeability Profile of Epinephrine. [AAPS 2018 \(T0930-10-080\)](#) – Washington, DC (Nov. 4-7)
8. Bafail R[§], **Rawas-Qalaji MM[&]**. Assessment of the pH-Stability Profile of Epinephrine for Sublingual Administration. [AAPS 2018 \(T0930-11-084\)](#) – Washington, DC (Nov. 4-7)
9. Bafail R[§], Aodah AH[§], **Rawas-Qalaji MM[&]**. The Combined Effect of a Penetration Enhancer and an Alkalinizing Agent on the Sublingual Permeability of Atropine from Fast Disintegrating Sublingual Tablets. [AAPS 2017 \(M4038\)](#) – San Diego, CA (Nov. 11-15)
10. Bafail R[§], Aodah AH[§], **Rawas-Qalaji MM[&]**. Microenvironment's pH Modification and Its Effect on Enhancing the Sublingual Permeability of Atropine from Fast Disintegrating Sublingual Tablets (FDSTs). [AAPS 2017 \(M4037\)](#)- San Diego, CA (Nov. 11-15)
11. Zahrah F, Shosha'a S, Alzahabi K, Khalil A, **Rawas-Qalaji MM**, Rachid O. A novel, simple semi-automated solid phase extraction method of epinephrine: A potential approach for optimizing the recovery of catecholamines and their metabolites from biological samples. AAPS 2017 - San Diego, CA (Nov. 11-15)
12. **Rawas-Qalaji MM[&]**, Rachid OM, Simons KJ..Preclinical Study of Taste-Masked Epinephrine Microcrystals formulated as Fast-Disintegrating Sublingual Tablets. AAPS 2017 - San Diego, CA (Nov. 11-15)
13. Aodah AH[§], Bafail R[§], **Rawas-Qalaji MM[&]**. Effect of Changing Tablet Dimensions on the Characteristics of Fast Disintegrating Sublingual Tablets of Atropine Sulfate. AAPS 2016:27T0100 - Denver, CO (Nov. 13-17)
14. Aodah AH[§], Bafail R[§], **Rawas-Qalaji MM[&]**. Effect of Atropine Sulfate Load on the Physical Properties of Fast Disintegrating Sublingual Tablets. AAPS 2016:30M0100 - Denver, CO (Nov. 13-17)
15. Bafail R[§], Aodah AH[§], **Rawas-Qalaji MM[&]**. The Effect of pH on the Sublingual Permeability of Atropine Sulfate Tablets. Presented during AAPS 2016:06M0330 - Denver, CO (Nov. 13-17)
16. Bafail R[§], Aodah AH[§], **Rawas-Qalaji MM[&]**. The Effect of the Filler Grade on the Characteristics of Fast Disintegrating Tablet Formulation. AAPS 2016:31M0100 - Denver, CO (Nov. 13-17)

17. **Rawas-Qalaji MM[&]**, Jahan N*, Vorontsova Y*. Combination of Bottom-Up and Top-Down Techniques for the Fabrication of Epinephrine Nanocrystals. *AAPS* 2016:21T0930 - Denver, CO (Nov. 13-17)
18. **Rawas-Qalaji MM[&]**, Pulido M*, Ungureanu S*, Diaz A*. Role of Surfactants in the Fabrication of Epinephrine Nanocrystals Using High Sheer Fluid Processor (Microfluidizer). *AAPS* 2016:21M1000 - Denver, CO (Nov. 13-17)
19. Aodah AH[§], Bafail R[§], **Rawas-Qalaji MM[&]**. Sublingual Permeability of Atropine Sulfate Using Novel Rapidly Disintegrating Tablets for The Potential Treatment of Acute Organophosphates Toxicity. *AAPS* 2015:W5147 - Orlando, FL (Oct. 25-29)
20. Aodah AH[§], Bafail R[§], **Rawas-Qalaji MM[&]**. Development and Validation of a Simple Disintegration Test for Rapidly Disintegrating Tablets. *AAPS* 2015:R6138 - Orlando, FL (Oct. 25-29)
21. Alaydi L[§], **Rawas-Qalaji MM[&]**. Development and Validation of RP-HPLC Method Using Photo Diode Array Detection for Simultaneous Quantification of Dipivefrine and its Active Metabolites Co-eluting in Pharmaceutical Samples. *SIGMA XI Annual Conference* - [Poster # CHM-05:P96](#), Glendale , AZ (Nov 6-9, 2014)
22. Alaydi L[§], **Rawas-Qalaji MM[&]**. Simultaneous Detection and Quantification of Dipivefrine and Its Metabolites in Pharmaceutical Samples Using HPLC Method with Photo-Diode-Array Detector. *AAPS* 2014:W4194 - San Diego, CA (Nov. 2-6)
23. Aodah AH[§], **Rawas-Qalaji MM[&]**. In Vitro Diffusion of Novel Rapidly Disintegrating Sublingual Tablets of Atropine Sulfate. *AAPS* 2014:W5096 - San Diego, CA (Nov. 2-6)
24. Aodah AH[§], **Rawas-Qalaji MM[&]**. The Effect of Tablets Dimension and Weight on the Influx of Atropine Sulfate from Novel Rapidly Disintegrating Sublingual Tablets. *AAPS* 2014:W5097- San Diego, CA (Nov. 2-6)
25. Aodah AH[§], **Rawas-Qalaji MM[&]**. Formulation of Novel Rapidly Disintegrating Sublingual Tablets of Atropine Sulfate for The Potential Use As An Alternative Dosage Form for the Management of Acute Organophosphate Toxicity. *AAPS* 2014:T2148 - San Diego, CA (Nov. 2-6)
26. Rachid OM, Lewis S*, **Rawas-Qalaji MM**, Simons ER, Simons KJ. Epinephrine Autoinjectors: Device Integrity and Epinephrine Content after Exposure to Extreme Storage Conditions. *AAPS* 2014:M1117- San Diego, CA (Nov. 2-6)
27. **Rawas-Qalaji MM[&]**, Rachid OM, Losada A*, Mendez AB*, Simons ER, Simons KJ. Absorption of Epinephrine Microcrystals from Novel Taste-Masked Rapidly Disintegrating Sublingual Tablets for the Potential First-Aid Treatment of Anaphylaxis. *AAPS* 2014:M1331- San Diego, CA (Nov. 2-6)
28. Simons KJ, Rachid OM, **Rawas-Qalaji MM[&]**, Mendez AB*, Losada A*, Simons ER. Preclinical Study of Rapidly-Disintegrating Sublingual Tablets (RDST): Effect of Epinephrine (E) Incorporated as Nanoparticles. [J Allergy Clin Immunol 2014; 133\(2\) SUPPL. 1: AB166](#). **Selected for featured presentation** at AAAAI Annual Conference, San Diego, CA (Feb 28-Mar 4)
29. Aodah AH[§], Mendez AB*, Losada A*, **Rawas-Qalaji MM[&]**. Fabrication of Epinephrine Nanocrystals Using High Sheer Fluid Processor (Microfluidizer). *AAPS* 2013: W5090 - San Antonio, TX (Nov. 10-14)
30. **Rawas-Qalaji MM[&]**, Losada A*, Mendez B*, Rachid OM[§], Simons ER, Simons KJ. *In*

- Vitro* and *Ex Vivo* Diffusion of Epinephrine Nanocrystals Using Novel Rapidly Disintegrating Sublingual Tablets for the Potential First-Aid Treatment of Anaphylaxis. *AAPS* 2013: M1100 - San Antonio, TX (Nov. 10-14)
31. **Rawas-Qalaji MM[&]**, Rachid OM[§], Mendez AB*, Losada A*, Simons ER, Simons KJ. Absorption of Epinephrine Nanocrystals from Novel Rapidly Disintegrating Sublingual Tablets for the Potential First-Aid Treatment of Anaphylaxis. *AAPS* 2013: R6312 - San Antonio, TX (Nov. 10-14)
 32. Rachid OM[§], **Rawas-Qalaji MM**, Simons FER, Simons KJ. Epinephrine for the Treatment of Anaphylaxis: A Preclinical Study of Taste-Masked Rapidly-Disintegrating Sublingual Tablets for Pediatric Use. *AAPS* 2013: W4325 - San Antonio, TX (Nov. 10-14)
 33. Simons KJ, Rachid O[§], **Rawas-Qalaji MM**, Simons FER. Preclinical Study: Dose Comparison of New-Generation Taste-Masked Epinephrine (E) Sublingual Tablets. [J Allergy Clin Immunol 2013; 131\(2\) SUPPL. 1: AB190](#) - San Antonio, TX (Feb. 22-26)
 34. Rachid O[§], **Rawas-Qalaji MM**, Simons FER, Simons KJ. Epinephrine for the First-aid Treatment of Anaphylaxis: A Preclinical Study of New-generation, Fast-disintegrating Taste-masked Sublingual Tablets. *AAPS* 2012: M1291 - Chicago, IL (Oct. 14-18)
 35. **Rawas-Qalaji MM[&]**, Mendez B*, Daghistani N*, Rachid OM[§], Simons ER, Simons KJ. Evaluation of the Development of Epinephrine Nanoparticles using Ionic Gelation Technique. *AAPS* 2012: T3243 - Chicago, IL (Oct. 14-18)
 36. **Rawas-Qalaji MM[&]**, Rachid OM[§], Simons ER, Simons KJ. Fast-disintegrating Sublingual Epinephrine Tablets: Long Term Stability Study. *AAPS* 2012: M1381 - Chicago, IL (Oct. 14-18)
 37. Simons KJ, Rachid O[§], **Rawas-Qalaji MM**, Wein M, Simons FER. Outdated Epinephrine Autoinjectors: Ejection Volume Integrity and Epinephrine Content and Dose. [J Allergy Clin Immunol 2012; 129\(1\) SUPPL. 1: AB180](#) - Orlando, FL (Mar. 2-6)
 38. Rachid O[§], **Rawas-Qalaji MM**, Simons FER, Simons KJ. Outdated Epinephrine Autoinjectors: Integrity of the Delivery Systems/ Stability of the Contents. *AAPS* 2011: M1026 - Washington, D.C. (Oct. 23-27)
 39. Rachid O[§], **Rawas-Qalaji MM**, Simons FER, Simons KJ. Rapidly-Disintegrating Sublingual Tablets of Epinephrine: Effect of Various Excipients on Disintegration and Dissolution. *AAPS* 2011: T3074 - Washington, D.C. (Oct. 23-27)
 40. **Rawas-Qalaji MM[&]**, Desai K*, Rachid O[§], Simons FER, Simons KJ. Development of Epinephrine Nanoparticles Using Chitosan for the Treatment of Anaphylaxis. *AAPS* 2011: W4174 - Washington, D.C. (Oct. 23-27)
 41. **Rawas-Qalaji MM[&]**, Nieves E. Fabrication of Epinephrine Nanoparticles Using Microfluidizer Processor for the Treatment of Anaphylaxis. [NanoFlorida 2011: The 4th Annual NanoScience Technology Symposium, 2011, P18: P49](#) - Florida International University, Miami, FL, (Sep. 30-Oct 1)
 42. Simons KJ, Rachid OM[§], **Rawas-Qalaji MM**, Simons FER. Epinephrine autoinjectors for the first-aid treatment of anaphylaxis: Epinephrine dose ejected after 11-13 years in controlled storage conditions. [J Allergy Clin Immunol 2011; 127\(2\) SUPPL. 1: AB244](#) - San Francisco, CA (Mar. 18-22)

43. Rachid OM[§], **Rawas-Qalaji MM**, Simons FER, Simons KJ. Epinephrine Autoinjectors for the First-Aid Treatment of Anaphylaxis: Epinephrine Contents Post-Expiry Date. *AAPS 2010*: T3045 - New Orleans, LA (Nov. 14-18)
44. **Rawas-Qalaji MM**[§], Nieves E, Desai K*, Stubblefield J*, Rachid O, Simons KJ. In vitro Diffusion of Epinephrine Nanoparticles Using a Flow-Through Diffusion System. [*JPPS 2010*; 13\(3\): 81-82s](#) - Vancouver, Ca (Jun. 2-5)
45. Rachid OM[§], **Rawas-Qalaji MM**, Simons FER, Simons KJ. Novel Dissolution Apparatus Designed to Evaluate Sublingual Tablets. *AAPS 2008*: R6311 - Atlanta, GA (Nov. 16-20)
46. Rachid OM[§], **Rawas-Qalaji MM**, Simons FER, Simons KJ. The Effect of Non-Medicinal Ingredients on the Dissolution of Epinephrine from Novel Sublingual Tablets. *AAPS 2007*: T3367 - San Diego, CA (Nov. 10-15)
47. Rachid OM[§], **Rawas-Qalaji MM**, Simons FER, Simons KJ. Novel Epinephrine Sublingual Tablets: Does the Grade of the Microcrystalline Cellulose Diluent Affect the Dissolution Rate? *AAPS 2007*: T3373 - San Diego, CA (Nov. 10-15)
48. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Fast-Disintegrating Sublingual Epinephrine Tablets: High Temperature Stability Study. [*J Allergy Clin Immunol 2007*; 119\(1\);S32-33](#) - San Diego, CA (Feb. 23-27)
49. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Epinephrine for the Treatment of Anaphylaxis: Do all Sublingual Epinephrine Tablet Formulations with Similar In Vitro Characteristics have the Same Bioavailability? [*AAPS 2006*: 001280](#) - San Antonio, TX (Oct. 29-Nov 2)
50. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Epinephrine for the Treatment of Anaphylaxis: Sublingual Epinephrine Tablet Versus EpiPen[®]. [*J Allergy Clin Immunol 2006*; 117\(2\): S85](#) - **Selected for featured presentation** at AAAAI Annual Conference in Miami Beach, FL (Mar 3-7)
51. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Stability of Epinephrine Over Five Months at Four Different Non-Optimal Storage Conditions. [*J Allergy Clin Immunol 2005*; 115\(2\): S136-137](#) - San Antonio, TX (Mar. 18-22)
52. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Fast-Disintegrating Sublingual Epinephrine Tablets: Long Term Stability Study. *AAPS 2005*: 001051 - Nashville, TN (Nov. 6-10)
53. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Fast-Disintegrating Sublingual Epinephrine Tablets: Effect of Drug and Tablet Dimensions on Tablet Characteristics. *AAPS 2005*: 001041 - Nashville, TN (Nov. 6-10)
54. Alessi-Severini S, **Rawas-Qalaji MM**, Racher A, Collins D, Kozyrskiy A. Prescribing Trends for Celecoxib (Celebrex[®]) in the Province of Manitoba: Influence of Published Clinical Evidence and Provincial Reimbursement Status. *AAPS 2004*: T2372 - Baltimore, MD (Nov. 7-10)
55. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Pre-Loaded Epinephrine Syringes Stored Under Light in Dry or Humid Conditions at 38 °C for 5 Days are Stable for Emergency Treatment of Anaphylaxis. *AAPS 2004*: T3115 - Baltimore, MD (Nov. 7-10)
56. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Stability of Epinephrine in Buffers and Human Saliva at 37 °C. *AAPS 2004*: W4180 - Baltimore, MD (Nov. 7-10)
57. **Rawas-Qalaji MM**, Simons ER, Simons KJ. Evaluation of the Effect of Changing Tablet Dimensions on the Characteristics of Fast-Disintegrating Sublingual Epinephrine Tablets

for the Fist-Aid Treatment of Anaphylaxis Away from Health Care Facilities. *AAPS* 2004: W4179 - Baltimore, MD (Nov. 7-10)

58. **Rawas-Qalaji MM**, Gu X, Simons ER, Simons KJ. Formulation of Fast-Disintegrating Sublingual Epinephrine Tablets for the Fist-Aid Treatment of Anaphylaxis Away from Health Care Facilities. *AAPS* 2004: W4178 - Baltimore, MD (Nov. 7-10)
59. Simons KJ, **Rawas-Qalaji MM**, Chan ES, Simons ER. Stability of Epinephrine in Pre-Loaded Syringes Located in Pediatric Allergy Clinics for the Prompt Emergency Treatment of Anaphylaxis. *AAPS* 2003: T3273 - Salt Lake City, UT (Oct. 26-30)

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PRESENTATIONS

1. Invited Speaker: Polymer Therapeutics Seminar, School of Pharmacy, University of Nottingham, Nottingham, UK, Feb 8, 2021
2. Invited Speaker: AddMedica Pharma, Paris, France, May 16 -20, 2018
Title: Novel Approach for Non-Invasive Treatment of Anaphylaxis Using Nanotechnology
3. Invited Speaker: College of Pharmacy & Nutrition, University of Saskatchewan, Canada, June 25, 2018
Title: Novel Approach for Non-Invasive Treatment of Anaphylaxis Using Nanotechnology
4. Invited Speaker: The 7th Annual Syrian American Medical Society (SAMS) National Conference, Orlando, Florida, Feb 17-19, 2018
Title: Novel Approach for the Non-Invasive Treatment of Anaphylaxis Using Nanotechnology
5. Invited Speaker: 28th Annual Contemporary Pharmacy Issues Conference, Nova Southeastern University, May 6-7, 2017
Title: Value of Research and Commitment
6. Invited Speaker: Sharjah University, College of Pharmacy, Sharjah, United Arab Emirates, April 10, 2017
Title: Novel Approach for Enhancing Sublingual Absorption Using Nanotechnology: Sublingual Epinephrine for the Potential First-Aid Treatment of Anaphylaxis
7. Invited Speaker: The Institute for Neuro-Immune Medicine (INIM): Research Seminar, Center for Collaborative Research, Nova Southeastern University, Feb. 3, 2017
Title: Organophosphates Toxicities and Potential Alternative Route for Atropine Administration
8. Invited Speaker: Susie and Alan Levan Ambassadors Board, Executive Conference Center at the Sales Institute, Huizenga College of Business and Entrepreneurship, Nova Southeastern University, Feb. 9, 2017
Title: Epi-Pill, an Alternative to the EpiPen®
9. The 126th Florida Pharmacy Association Annual Meeting and Convention, Fort Lauderdale, FL, June 30-July 3, 2016
Title: Improving Adherence in Type I Diabetics Through Mobile Application (**won the 3rd Place Award**)
10. Invited Speaker: Dubai International Pharmaceuticals and Technologies (DUPHAT) Conference and Exhibition, Dubai, United Arab Emirates, March 15 – 17, 2016
Title: Novel Approach for Enhancing Sublingual Absorption Using Nanotechnology: Sublingual Epinephrine for the Potential First-Aid Treatment of Anaphylaxis
11. Invited Speaker: The 5th Annual Syrian American Medical Society (SAMS) National Conference, Orlando, Florida, Feb 12-14, 2016
Title: An Overview of Organophosphates Toxicities: Current Treatment and Potential Alternatives
12. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 12, 2016
Title: The Effect of MCC Grade on the Physical Properties of Atropine Sulfate Rapidly Disintegrating Sublingual Tablets.

13. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 12, 2016
Title: Sublingual Permeability of Atropine Sulfate Using Novel Rapidly Disintegrating Tablets for The Potential Treatment of Acute Organophosphates.
14. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 12, 2016
Title: Validation of a Simple Disintegration Test for Rapidly Disintegrating Tablets.
15. Dean's Innovations in Teaching Award, Annual Faculty Development Program, College of Pharmacy, Nova Southeastern University, May 19-20, 2015
Title: Can Innovative Teaching Tools Reduce the Difference between Distant Teaching Sites or Improve Student's Grades?
16. New Faculty Orientation Program, Department of Pharmacy Practice, Nova Southeastern University, Aug 4-8, 2014
Title: Constructing and Cultivating a Pharmacy Curriculum.
17. Manitoba Society of Pharmacists Conference, Winnipeg, Manitoba, Canada, Apr. 25-27, 2014
Title: Preclinical Study of Rapidly-Disintegrating Sublingual Tablets (RDST) containing Epinephrine Nano-Crystals (E-NC) for Potential First-Aid Treatment of Anaphylaxis (**won the Best Poster Award**)
18. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 14, 2014
Title: A Novel Approach for Enhancing the Sublingual Absorption of Epinephrine from Rapidly Disintegrating Tablets for the Potential First-Aid Treatment of Anaphylaxis.
19. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 14, 2014
Title: Effect of Particles Size on Epinephrine Sublingual Diffusion for the Potential First-Aid Treatment of Anaphylaxis: In Vitro and Ex Vivo Study.
20. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 14, 2014
Title: Absorption of Taste-Masked Rapidly-Disintegrating Sublingual Epinephrine Tablets for Pediatric Use for the Treatment of Anaphylaxis.
21. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 14, 2014
Title: Fabrication and Characterization of Epinephrine Nanocrystals Using Top-Down Technique.
22. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 14, 2014
Title: Development and Validation of HPLC Method with PDA Detector for Simultaneous Quantification of co-eluted compounds in Pharmaceutical Samples.
Abstract submitted for poster presentation
23. Health Professions Divisions (HPD) Research Day, Nova Southeastern University, Feb. 14, 2014
Title: Validation of HPLC Method and Ultra Violet Detection for the Quantification of Atropine Sulfate in Aqueous Samples.
24. Canadian Society for Pharmaceutical Sciences (CSPS) Annual Symposium, Vancouver, Canada, Jun. 11-14, 2013

- Title: Effect of Epinephrine Particles Size on Its *Ex Vivo* Sublingual Diffusion from Rapidly Disintegrating Epinephrine Tablets for the Potential First-Aid Treatment of Anaphylaxis.
25. Globalization of Pharmaceuticals Education Network Meeting, Monash University, Melbourne, Australia, Nov. 29, 2012
Title: A Preclinical Study of New-Generation, Rapidly-Disintegrating Taste-Masked Epinephrine Sublingual Tablets for the Treatment of Anaphylaxis.
 26. Collegium International Allergologicum (CIA), Jeju Island, South Korea, Oct. 16-19, 2012
Title: New-Generation, Fast-Disintegrating Taste-Masked Epinephrine Sublingual Tablets: Preclinical Study.
 27. Association of Pharmacists of PR Meeting, Fajardo, PR, Aug. 23 - 25, 2012
Title: Fabrication of Epinephrine Nanoparticles Using Microfluidizer Processor for the Treatment of Anaphylaxis.
 28. American Academy of Pediatric Dentistry (AAPD) Annual Session, San Diego, CA, May 24-27, 2012
Title: In Vitro Evaluation of Xylitol Release from Baby Tooth Wipes.
 29. Research Day, College of Dental Medicine- Nova Southeastern University, May. 14, 2012
Title: In Vitro Evaluation of Xylitol Release from Baby Tooth Wipes.
 30. Research Day, College of Pharmacy-Nova Southeastern University, Feb. 10, 2012
Title: Development of Epinephrine Nanoparticles Using Chitosan for the Treatment of Anaphylaxis.
 31. Graduate Seminar, College of Pharmacy-Nova Southeastern University, Nov. 2011
Title: Fabrication of Epinephrine Nanoparticles: Success and Failures.
 32. Scientific Series 2011: Bringing Pharmaceutical Research to Practice, Sheraton Hotel, Ponce, Puerto Rico, Apr. 17, 2011
Title: Oral Controlled Drug Delivery
 33. Invited Speaker: Asia Pharmaceutical Industries, Aleppo, Syria, Jul. 2010
Title: A Novel Approach for the treatment of Anaphylaxis
 34. Invited Speaker: Ebla Private University, Aleppo, Syria, Jun. 2010
Title: A Novel Approach for the treatment of Anaphylaxis
 35. Invited Speaker: School of Pharmacy-University of Waterloo, Ontario, Canada, Feb. 2008
Title: Fast-Disintegrating Sublingual Epinephrine Tablets: A Novel Approach for the Emergency Treatment of Anaphylaxis
 36. Invited Speaker: American Academy of Allergy Asthma and Immunology, Miami Beach, Florida. 2006
Title: Epinephrine for the Treatment of Anaphylaxis: Sublingual Epinephrine Tablet Versus EpiPen®
 37. Association of Faculties of Pharmacy of Canada (AFPC), Canada, Ottawa, Canada, 2006
Title: Sublingual Epinephrine Tablets Versus Intramuscular Injection of Epinephrine: Dose Equivalence for Potential Treatment of Anaphylaxis (**won the Best Poster Award**)
 38. Roche Symposium on Advances in the Management of Cardiovascular Diseases, Singapore, 1999
Title: The Role of β -Blockers in Heart Failure

STUDENTS MENTORING AND ADVISING EXPERIENCE

Founding & Advising Students' Organization:

- **Founding Advisor** for Nova Southeastern University College of Pharmacy chapter of the Industry Pharmacists Organization (**NSU-COP IPhO**)
- NSU-COP IPhO was approved on August 7th, 2018 as a nationally affiliated chapter.

Advising & Mentoring:

- Mentoring **Post-Doc**:
 - 2019: Dr. Yu Zhao, NSU, Fort Lauderdale, FL
 - 2020-current: Dr. Roberta Cagliani, Drug Delivery Research Group, UoS, Sharjah, UAE
- Advising **Master students**:
 - 2019-2021: 1 Master student
 - 2020-2021: 2 Masters students
 - 2021-present: 3 Masters students
- Advising **Ph.D. students**: 4 Ph.D. students (2012-2019).
- Advising **Pharm.D. students** as a faculty advisor, College of Pharmacy, Nova Southeastern University, 2009 – present
- Advising **Pharmacy Students graduation projects**:
 - 2020 – Spring: 3 students groups (total 8 students)

Laboratory Research Mentoring:

- Mentoring **14 Ph.D. students** during their laboratory research rotations. College of Pharmacy, Nova Southeastern University, 2010-present.
- Mentoring and training **22 Pharmacy, Dental, and Undergraduate students**, College of Pharmacy, Nova Southeastern University, 2009-present
- Mentoring **8 research associates and co-op students** in industry, QLT Inc. and EnWave Corp., Vancouver, Canada, 2007-2008.
- Mentoring **2 summer research assistant students**, University of Manitoba, Canada, 2004-2006

Literature Research Mentoring:

- Mentoring Pharm D and undergraduate students on literature searches, writing manuscripts, submitting manuscripts for publication, responding to reviewer's comments and questions, College of Pharmacy, NSU, 2009 – present (**we published one review article and 6 peer-reviewed abstracts**).

Poster Presentations Mentoring:

- Mentoring and judging for Students' Poster Session of Therapeutics and Pathophysiology III course (including report, poster, and presentation), College of

Pharmacy, NSU, Winter 2016 (**my group won the Best Presentation Award and Third Place FPA Award**).

- Mentoring and judging for Students' Poster Session of Therapeutics and Pathophysiology III course (including report, poster, and presentation), College of Pharmacy, NSU, Winter 2009 and 2010 (**my group won the best poster content award**).
- Mentoring Pharmacy students to prepare posters and present at international conferences (**4 students have presented at international AAPS conferences**)
- Mentoring Ph.D. students to prepare posters and present at local and international conferences (**AAPS, HPD Research Day**)

SERVICE EXPERIENCE

National and International Level:

- Expert Consultant, Patent Infringement, Finnegan Henderson, Washington D.C., USA, June 4, 2021
- Invited as a **Pharmaceutical Industry Consultant** for MOHP, UAE, June 2021
- Invited as **External Reviewer for Faculty Promotion**, The Institute of Applied Technology (IAT), Abu Dhabi, UAE, June 3, 2021
- Invited to join **Commission for Academic Accreditation (CAA) Auditing Team**, Ministry of Education, UAE (Feb 2021)
- Invited **External Examiner (Ph.D. Dissertation)**, College of Graduate and Postdoctoral Studies, University of Saskatchewan, Saskatoon, Canada, June 25, 2018
- Invited **External Reviewer**, Technology Commercialization Fund program, University of Connecticut, December 2017
- Invited **Primary Grant Reviewer**, Qatar University, October 2017
- Invited **Primary Grant Reviewer**, Long Lasting Medications Panel, NASA-Translational Research Institute (TRI), 2017 and 2019
- Invited **External Committee Member (Ph.D. Dissertation)**, Center of Research, Anna University, India, Aug 2017
- **Represented NSU and College of Pharmacy** at the International Exhibition and Conference on Higher Education, Riyadh, Saudi Arabia, April 12-25, 2017.
- **Represented NSU-TRED** at BioFlorida Annual Conference, Jacksonville, FL, Dec 11-13, 2016.
- **Represented NSU-TRED** at FierceBiotech Drug Development Forum, Boston, MA, Sep 18-21, 2016.
- **Represented NSU- and College of Pharmacy** at eMerg Americas Tech Conference, Miami, FL, May 2-5, 2015
- Invited **External Member of Faculty Tenure/Promotion Committee** for Texas A&M College of Pharmacy, July, 2013
- Invited **External Grant Reviewer** for California Northstate University College of Pharmacy Seed Grant, 2012-2013
- **Bioequivalence Focus Group: Active Member**
American Association of Pharmaceutical Scientists (AAPS), 2012-present.
Role: promote understanding of equivalence of different dosage forms, develop programs and publications for AAPS annual meeting and National Biotechnology conferences
- **In Vitro Release and Dissolution Testing (IVRDT) Focus Group: Active Member**
American Association of Pharmaceutical Scientists (AAPS), 2013-present.
Role: promote understanding of IVRDT, develop programs and publications for AAPS annual meeting and National Biotechnology conferences
- **Excipients Focus Group: Active Member**
American Association of Pharmaceutical Scientists (AAPS), 2012-present.

Role: promote understanding of Excipients utilization, develop programs and publications for AAPS annual meeting and National Biotechnology conference

- Invited **Mentor** at the Career Mentoring Breakfast Canadian Society for Pharmaceutical Sciences (CSPS) Annual Symposium, Richmond, BC, Canada, June 2-5, 2010.
- Invited **Curriculum Reviewer** for the Department of Pharmaceutics and Pharmaceutical Technology, Ebla Private University, Aleppo, Syria, June, 2010.
- **Reviewer in peer-reviewed journals** for manuscripts submitted for publication (*Journal of Pharmaceutical Scientist, International Journal of Pharmaceutics, Journal of Biopharmaceutics and Drug Disposition, Journal of Materials Research Society Bulletin, Journal of AAPSPharmaSciTech, Journal of Biomaterials Science: Polymer Edition, British Journal of Pharmaceutical Research, etc.*)
- **Reviewer of submitted conferences abstracts** for poster presentation and publication in peer-reviewed journals or conference proceedings (*American Association of Pharmaceutical Scientists (AAPS) Annual Conference, AAPS National Biotechnology Conference, and Materials Research Society (MRS) Annual Conference, 2010-present*)
- **Chair of AAPS-UManitoba Student Chapter**, American Association of Pharmaceutical Scientists (**AAPS**) (2005-2006)
- **Vice Chair of AAPS-UManitoba Student Chapter**, American Association of Pharmaceutical Scientists (**AAPS**) 2004-2005

University Level:

- **Panelist**, Sharjah Oasis For Technology & Innovation (SOTI), April 1, 2021
- **Founding Leader** for the Drug Delivery Research Group, RIMHS, UoS, University of Sharjah, Sharjah, United Arab Emirates (2020)
- **Founding Director** for the Center for Drug Discovery and Development (CD³), NSU (2016-present)
- **Quality Enhancement Plan Committee** (Member), NSU (2014-present)
- Invited **Grant Reviewer** for President's Faculty Research and Development Grant (PFRDG), NSU (2014)
- **Abstracts Reviewer** for Health Professions Division (HPD) Research Day, NSU (2012-2013)

College of Pharmacy Level:

- **Curriculum Reform (BSc)Task Force Committee** (Member), College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2021-present)
- **Students Interview Committee** (Member), College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2021-present)
- **Faculty Recruitment Committee** (Member), College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2021-present)

- **Thesis Examining Committee (Chair)**, College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2021)
- **Students Misconduct and Discipline Committee (Chair)**, College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2020-present)
- **Ad-hoc Committee for ACPE Application** (Member), College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2021-present)
- **PhD Program Committee** (Member), College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2020-present)
- **Research and Graduate Programs Committee** (Member), College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2019-present)
- **Scientific Affairs Committee** (Member), College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2019-present)
- **Visionary Education Team for Strategic Planning** (Member), College of Pharmacy, NSU (2017-2019)
- **Pharm. D. Curriculum – Basic Knowledge Group (Chair)**, College of Pharmacy, NSU (2016-2019)
- **Visionary Education Modular Development Taskforce** (Member), College of Pharmacy, NSU (2015-2016)
- **Ph.D. Admission Committee** (Member), College of Pharmacy, NSU (2014-2019)
- **Research Committee** (Member), College of Pharmacy, NSU (2014-2015)
- **Ph.D. Dissertation Committee (Chair)**, College of Pharmacy, NSU (2013-2019)
- **Ph.D. Dissertation Committee** (Member), College of Pharmacy, NSU (2013-2017)
- **Inter-professional Education (IPE) Committee** (Member), College of Pharmacy, NSU (2015-2016)
- **Pharm. D. Curriculum Committee** (Member), College of Pharmacy, NSU (2012-2019)
- **AACP Accreditation Self-Study Committee-Curriculum standards (Team Leader)**, College of Pharmacy, NSU (2013-2014)
- **Pharm. D. Curriculum Outcomes Sub-Committee** (Member), College of Pharmacy, NSU (2012-2013)
- **Ph.D. Curriculum Committee** (Member), College of Pharmacy, NSU (2010-2013)
- **Admissions Committee** (Member), College of Pharmacy, NSU (2008-2012)
- **Interviewing students** applying for admission into the College of Pharmacy, NSU (2008-2019)
- **Faculty Student's Advisor**, College of Pharmacy, NSU (2009-2019)
- Graduate Students Representative, Faculty of Pharmacy, University of Manitoba (2005-2006)
- Graduates Students Awards Committee (Member), Faculty of Pharmacy, University of Manitoba (2005-2006)

Department of Pharmaceutical Sciences Level:

- **Faculty Promotion Sub-Committee** (Member), Department of Pharmaceutics & Pharmaceutical Technology, College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2019)
- **Postdoctoral Fellow Screening and Interviewing Committee (Chair)**, Drug Delivery Research Group, Research Institute of Medical & Health Sciences, University of Sharjah, United Arab Emirates (2020)
- **Clinical Tutor Selection and Interviewing Committee** (Member), Department of Pharmaceutics & Pharmaceutical Technology, College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (April, 2020)
- **Masters Students Examining Committee** (Member), Department of Pharmaceutics & Pharmaceutical Technology, College of Pharmacy, University of Sharjah, Sharjah, United Arab Emirates (2020-present)
- **Curriculum and Assessment Committee (Chair)**, Department of Pharmaceutical Sciences, College of Pharmacy, NSU (2015-2019)
- **Faculty Recruitment Committee (Chair)**, Department of Pharmaceutical Sciences, College of Pharmacy, NSU (2010-2014)
- **Ph.D. Curriculum Committee (Chair)**, Department of Pharmaceutical Sciences, College of Pharmacy, NSU (2012-2013)
- **Department Secretary Recruitment Committee** (Member), Department of Pharmaceutical Sciences, College of Pharmacy, NSU (for Krista Marshall in 2011 and Christie Priemer in 2012)
- **Pharmaceutics Sub-curriculum Committee** (Member), Department of Pharmaceutical Sciences, College of Pharmacy, NSU (2009-2010)
- **Faculty Recruitment Committee** (Member), Department of Pharmaceutical Sciences, College of Pharmacy, NSU (2008-2010)
- **Scholarship and Faculty Development Committee** (Member), Department of Pharmaceutical Sciences, College of Pharmacy, NSU (2008-2009)
- **Curriculum and Assessment Committee** (Member), Department of Pharmaceutical Sciences, College of Pharmacy, NSU (2008-2009)

Volunteer and Community Services:

- 2015-2019 Board Member-South Florida Chapter,
Syrian American Medical Society (SAMS)
- 2015-2018 Board Member,
Florida Refugee Assist Committee, Florida
- 2018-2019 Board Member,
STEM School, Sunrise, Florida

FACULTY PROFESSIONAL DEVELOPMENT AND TRAINING

National Institute for Health (NIH)

2012 Grant Writing Workshop. NGSM/NIH, University of Kentucky, Lexington, KY, May 7-9, 2012.

Nova Southeastern University

2018 CANVAS training, IZone
 2017 Title IX training “Preventing Harassment & Sexual Violence”, NSU
 2017 Faculty Certification Course - Blackboard Basics course, Office of Innovation & Information Technology, NSU
 2016 Faculty Online Certification, Office of Innovation & Information Technology, NSU
 2015 Blackboard Training, IZone
 2015 HIPA Privacy, Security, and Research Training, Environmental Health and Safety Department
 2015 Satellite Container Management Training, Environmental Health and Safety Department
 2015 Radiation Safety Training, Environmental Health and Safety Department
 2015 Personal Protective Equipment Training, Environmental Health and Safety Department
 2015 Laboratory Safety Training, Environmental Health and Safety Department
 2015 High Pressure Cylinder Training, Environmental Health and Safety Department
 2015 Hazard Communication Training, Environmental Health and Safety Department
 2015 Global Harmonized Systems Training, Environmental Health and Safety Department
 2015 Chemical Safety Training, Environmental Health and Safety Department
 2015 Chemical Hygiene Training, Environmental Health and Safety Department
 2015 Bloodborne Pathogens Training, Environmental Health and Safety Department
 2015 Biological Safety, Environmental Health and Safety Department
 2015 Ariba Training and Resources Course, IZone
 2014 Employee HIPAA Privacy Security and Research Training
 2014 Effort Reporting and ECRT for Principal Investigators and Faculty Certifiers
 2014 Environmental Health and Safety Education Services
 2014 Emergency Preparedness and Crisis Response Training
 2013 TurningPoint Response Systems using iPad and Android Apps, IZone
 2013 Ariba Training, IZone
 2012 Faculty Event: Converse, Connect, and Collaborate, Office of Research and Technology Transfer
 2011 “Instructional Design: Integrating Objectives, Learning Strategies and Assessment”, College of Pharmacy
 2010 Blackboard Training, IZone
 2009 Career Development Day, College of Pharmacy
 2009 Faculty Development and Faculty Research Development Seminars, Educational Development Office - HPD
 2009 Sponsored Funding Post-Award Training
 2009 HPD Library Services, Searches, and Resources Seminars, Educational Development Office - HPD

- 2009 TurningPoint Response Systems (clickers response pads), Educational Technology Office
- 2009 Blackboard Training, IZone
- 2009 Banner System, IZone
- 2008 WebCT training, IZone
- 2008 Online Course Development training, IZone
- 2008 Tegrity training, IZone
- 2008 Item Analysis, Testing center
- 2008 Faculty Development and Faculty Research Development Seminars, Educational Development Office - HPD
- 2008 HPD Library Services, Searches, and Resources Seminars, Educational Development Office - HPD
- 2008 Career Development Day, College of Pharmacy

American Association of Pharmaceutical Scientists (AAPS)

- 2008 Professional development sessions
- 2008 “Life as a professor at a university with a focus on teaching” session

American Academy of Allergy, Asthma & Immunology’s (AAAAI)

- 2006 Strategic Training in Allergy Research - ST*AR Program

University of Manitoba

- 2001 Laboratory Animal Care and Use

F. Hoffmann-La Roche Ltd

- 2000 - Behavior in Competition: A Guide to Competition Law
- 1999 - Gustave Kaser Training, Leading in a Team
- 1998 - Put It in Writing: Writing for Communication
- 1997 - Round Table Discussion
- Gustave Kaser Training, Sales 2:
 - Personal effectiveness in dealing with customer
 - Courage to excel oneself
 - Development of personal strengths
 - Self organization.
- Territory Management
- 1996 - Gustave Kaser Training, Sales 1:
 - Basic sales psychology and Self motivation
 - Personal planning and preparation
 - Public speaking and presentation
 - Conducting negotiation
 - Handling objections and Dealing with complaints
 - Effective influence within and outside the organization
- Presentation Skills

PROFESSIONAL AFFILIATIONS

2018-present	Executive Board Member, Arab American Pharmaceutical Scientists
2010-present	Member, Rho Chi Honor Society
2004-present	Member, American Association of Pharmaceutical Scientists (AAPS)
2015-2019	Board Member, Syrian American Medical Society (SAMS)
2004-2012	Member, Canadian Society for Pharmaceutical Sciences (CSPS)
2008-2010	Member, American Association of Colleges of Pharmacy (AACP)
2006-2008	Member, American Academy of Allergy, Asthma & Immunology (AAAAI)