Drug Delivery Technologies

Lab Members
Recent Graduates
Current PhD Students
PharmD Research Assistants
Undergraduate Interns
Current Research
Recent Inventions
Recent Publications
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Biography and CV
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LAB MEMBERS

David Mastropietro
2010-2015

Srinath Muppalaneni
2011-2016

Yogesh Joshi
2012-2017

Rand Ahmad
2015-Present

Arghavan Kariman
2013-2016

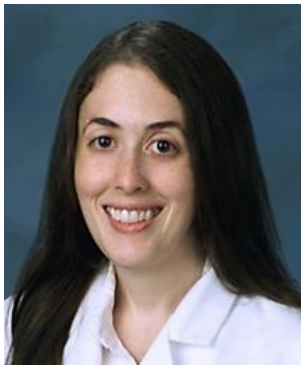
Theodore Elisme
2013-2014

Alborz Omidian
Summer 2015

Jessica Santana de Sa
Summer 2015

Sampa Mondal
2015-2017

Satya Vempati
2016-2017



Christina Crum
2016-2017

Riann Forbes
2016-Present

Breana Caturano
2017-2018

Samaneh Alaei
2017-Present

Niloofar Babanejad
2018-Present

Anusha Thumma
2018-Present

Dr. Omidian received his BSc (Tehran Polytechnic, Tehran, Iran, 1987), MSc (Tehran Polytechnic, Tehran, Iran, 1990), and PhD (Brunel University, UK, London, 1997) in Chemical Engineering (majored in Polymer Science and Engineering). From 1987 to 2000, he served as research scientist, assistant professor and department chair at Iran Polymer Institute. In 2001, he pursued postdoctoral fellowship in Prof. Kinam Park's lab at Purdue University. From 2002 to 2007, Dr. Omidian worked at Kos Pharmaceuticals and Abbott Laboratories as a senior research scientist, research manager and principal scientist. He is currently a Professor in the Department of Pharmaceutical Sciences, and an Associate Editor of the Journal of Bioactive and Compatible Polymers. He has 3 issued US patents, over 30 US and world patent applications, 28 invention disclosures, 84 publications, 164 presentations, 31 book chapters and books, 17 grant proposals, 7 graduates, and 4 current PhD students.

RECENT GRADUATES

Dr. David Mastropietro received his BS in Pharmacy from Massachusetts College of Pharmacy in 1999. He has been practicing pharmaceutical care in both community and hospital settings for over 17 years. After first studying Industrial Pharmacy and Pharmaceutics at Purdue University, David obtained his PhD in Pharmaceutics from Nova Southeastern University. Dr. Mastropietro is currently an Assistant Professor at NSU's College of Pharmacy, and participated in 7 patent applications, 10 invention disclosures, 24 publications, 63 presentations, 3 book chapters, and 4 grant proposals.

Dr. Srinath Muppalaneni received his BSc in Pharmacy from Andhra University (India, 2008), and MSc in Pharmaceutical Science from Campbell University (USA, 2010). He has worked as a formulation research associate at Campbell University Pharmacy Institute for three years. In 2016, Srinath obtained his PhD in Pharmaceutics from Nova Southeastern University and is currently a Product Steward at Mylan Pharmaceuticals, Inc. (Pennsylvania, United States). Srinath participated in 2 patent applications, 6 invention disclosures, 6 publications, 44 presentations, 2 book chapters, and 1 grant proposal.

Dr. Yogesh Joshi earned a BPharm (2005) and MPharm (2008) in Pharmaceutics from Dr. BAM University (India). He held a research associate position at pharmaceutical industries in India for two years working at different stages of drug development. In 2017, Yogesh obtained his PhD in Pharmaceutics from Nova Southeastern University and is currently a senior Research Scientist at UniPharma LLC (Florida, United States). Yogesh participated in 2 patent applications, 5 invention disclosures, 3 publications, 31 presentations, and 1 grant proposal.

CURRENT PHD STUDENTS

Rand obtained her BSc in Pharmacy (2002) and MSc in Pharmacology (2006) from Jordan University of Science and Technology. She has worked in the Research & Development and Regulatory Affairs Departments for eight years at different pharmaceutical companies in Jordan. Awarded with full scholarship, Rand joined our PhD program in 2015, and her research is focused on developing advanced abuse-deterrent pharmaceutical dosage forms. Rand has so far participated in 2 patent applications, 4 invention disclosures, 2 publication, 1 book chapter, 24 presentations, and 2 grant proposals.

Samaneh received her PharmD from Tehran University of Medical Sciences (Tehran, Iran) in 2014 while ranked 3rd in her class. After graduation, she spent 3 years as a research scientist and then as an oral dosage forms R&D manager in several pharmaceutical companies in Iran specialized in developing generic drugs. She was involved in the development and lunching of several pharmaceutical products in the Iranian market. Awarded with full scholarship, Samaneh joined our PhD program in Drug Development track in 2017, and has so far participated in 7 poster presentations, 2 publications, 1 book chapter, and 1 grant proposal.

Niloofar received her PhD in Organic Polymer Chemistry from Shahid Beheshti University (Tehran, Iran) in 2018, and ranked 1st in her class. She spent seven years researching oil-based polyurethanes and fibroin in drug delivery applications and disseminated her research in 15 peer-reviewed manuscripts published in high impact journals as well as in one Iranian patent. She also taught and served as research assistant during her PhD and worked as a technical manager of the Iranian Food and Drug Administration. Awarded with full scholarship, Niloofar joined our PhD program in Drug Development track in 2018 and has so far participated in 1 book chapter, 5 poster presentations, and 1 grant proposal.

Anusha completed her Bachelor of Pharmacy from Kakatiya University (India, 2011), and Master of Pharmacy with a specialization in Pharmaceutics from Osmania University (India, 2013). During her masters, she has worked on the formulation of Vaccine adjuvants at Indian Institute of Chemical Technology. She worked as a pharmacy beneficiary analyst position at industries like united health care and cognizant India. Also, she worked as a pharmacist in the hospital for a year. Anusha is currently pursuing her PhD in Pharmaceutics and joined our lab in 2019.

PHARMD RESEARCH ASSISTANTS

Arghavan received her BSc in Biological Science and a minor in Mathematics from the University of Central Florida (USA, 2010). Arghavan joined our research lab in 2013 as a research assistant and obtained her PharmD degree in 2016. She participated in 2 publications and 12 poster presentations. She also has won a research award before graduation. Arghavan is currently working retails in central pharmacy operations (CPO) implanting data and clinical reviews, ensuring patients health and monitoring their therapies.

Theodore received his BSc (1991, Florida Atlantic University), and MSc (1995, Florida International University) degrees in Chemistry, and has published several articles and presentations in Organic Geochemistry. He spent a total of 16 years teaching in several schools of Miami-Dade and Broward counties. After a successful career as a public-school teacher, Theodore decided to pursue his dream as a pharmacist, and earned his PharmD degree from Nova Southeastern University in May 2018.

Sampa graduated from the University of Toronto in 2010 with BSc degree in Human Biology and Animal Physiology. She continued her education at the University of Central Florida where she earned a second BSc degree in Molecular and Microbiology in 2014. In addition to her studies, she worked as a laboratory technician at the Citrus Research and Education Center and a learning assistant at Valencia College. Sampa joined our research lab in 2015 as research assistant and earned her PharmD from Nova Southeastern University in May 2018. Sampa participated in 9 poster presentations.

Satya earned his Bachelor of pharmacy (2004) from A.U College of pharmacy, Vizag, A.P, India, Master of Pharmaceutics (2007) from K.V.S.R. Siddhartha College of pharmaceutical sciences, Vijayawada, India, and Master of Industrial Pharmacy (2011) from long Island University, Brooklyn, New York. Satya gained 4 years of experience in pharmaceutical Formulation & analytical research quality control laboratory, by working in generic companies Ricon Pharma, Denville, NJ and Novel labs, Somerset, NJ. Satya joined our lab in 2015 as research assistant and earned his PharmD degree from Nova Southeastern University in May 2018. Satya participated in 3 poster presentations.

Christina graduated from Florida International University in 2009 with a B.S. in Biological Sciences with Honors and a minor in Chemistry. She had completed her thesis as an Undergraduate Student Investigator in the Department of Human and Molecular Genetics. Christina had also worked as an undergraduate Academic Team Tutor and was a member of Phi Beta Kappa Honor Society. From 2009 to 2015, she worked for CVS as a Certified Pharmacy Technician, Inventory Specialist, and later Intern. At NSU, she is a member of Rho Chi Honor Society and currently holds a Treasurer position for the American Society of Consultant Pharmacists. Christina joined our research lab in 2016 as a research assistant and earned her PharmD degree from Nova Southeastern University in May 2018. She participated in 7 poster presentations.

Breana received her Bachelor of the Arts in Chemistry at the University of Tampa in 2016. In addition to her studies at the University of Tampa, Breana worked as a Certified Pharmacy Technician at CVS pharmacy from 2014 to 2016. At her first year at NSU, she held the Class Secretary position. She is a member of American Pharmacists Association Academy of Student Pharmacists and currently holds the President-Elect position. Breana matriculated into a Master in Pharmaceutical Affairs program in 2016 at Nova Southeastern College of Pharmacy. She then bridged to the PharmD program and joined the lab in 2017. Breana is currently matriculating at Nova Southeastern College of Pharmacy pursing a Doctor of Pharmacy degree with an anticipated graduation in 2021. She participated in 4 poster presentations.

Riann is a graduate pharmacy dual admission student at Nova Southeastern University (NSU) where she also received her Bachelor of Science in Biology in May 2017. She has participated in research since high school and is currently a member in NSU's Chapter of American Pharmacist Association Academy of Student Pharmacists (APhA-ASP). She is currently working in our research lab as a research assistant intern and has so far participated in 7 poster presentations.

INTERNS

Alborz studied Biological Sciences and English Literature at the University of Chicago and graduated in 2017, and currently pursuing Doctor of Medicine at the New York Medical College (class of 2022). Alborz worked in the University of Miami, the Miller School of Medicine as an intern (summer 2014) and worked in our lab as research assistant intern over the summer of 2015. He also worked as research assistant in Gounari Lab at the University of Chicago and as SCA6 Registry Coordinator in the University of Chicago Medicine. Alborz participated in 4 publications and 4 poster presentations.

Jessica was a participant in the new Brazil Scientific Mobility program. Through this program, she has been in the US for over one and a half years gaining experience in scientific research. She is currently a senior undergraduate student at Federal University of Pernambuco pursuing a Pharmacy degree with an anticipated graduation in 2017. Jessica worked in our lab as research assistant intern over the summer of 2015 and participated in 2 poster presentations.

CURRENT RESEARCH

- Prescription Drug Abuse
- Abuse Deterrent Formulations
- Opioid Addiction and Overdose
- Controlled Drug Delivery
- Pharmaceutical and Biomedical Polymers

RECENT INVENTIONS

1. Abuse Resistant Drug Formulations:
   Inventors: H Omidian, Y Joshi, R Ahmad
   PCT/US2018/046237 (Filed Aug 10, 2018);
   U.S. Patent Application 62/244637 (Filed Oct 21, 2015) and 16/122,360 (Filed Sep 05, 2018)
2. Compositions for Deterring Abuse of Pharmaceutical Products and Alcohol:
   Inventors: H Omidian, S Muppalaneni, Y Joshi, D Mastropietro
   PCT/US16/58097 (Filed Oct 21, 2016); WO/2017/070462 (Filed Apr 27, 2017);
   U.S. Patent Application 62/244637 (Filed Oct 21, 2015)
3. Deterring Abuse of Pharmaceutical Products and Alcohol:
   Inventors: H Omidian, D Mastropietro, S Muppalaneni
   PCT/2014/US54863 (Filed: 09-09-2014); WO2015035423 (Filed: 03-12-2015);
   US Patent Application 14/917,368 (Filed: 03-08-2016)

RECENT PUBLICATIONS

1. D Schiavon, D N Martini, G Brocco, J S Santos, A P Anzolin, L G Rossato-Grando, C D Bertol, H Omidian: Multifunctional Cosmetic Containing Blueberry and Tinosorb M®-Loaded Microparticles Improves Sunscreen Performance, *Advanced Pharmaceutical Bulletin*, 9(2), 241-248, 2019
2. M Ghasri, H Bouhendi, K Kabiri, M Zohuriaan-Mehr, Z Karami, H Omidian: Superabsorbent Polymers Achieved by Surface Crosslinking of Poly(Sodium Acrylate) Using Microwave Method; *Iranian Polymer Journal*, 14 June (1st Online), https://doi.org/10.1007/s13726-019-00722-6, 2019
3. V Najafi, F Ziaee, E Ahmadi, H Sedaghat, H Omidian: Polyaniline-Modified Tio_2, A Highly Effective Photo-Catalyst for Solid-Phase Photocatalytic Degradation of PVC, *Journal of Polymers and Environment*, 27(4), 784-793, 2019
4. R Ahmad, S Alaei, H Omidian: Safety and Performance of Abuse Deterrent Formulations, *Expert Opinion on Drug Metabolism and Toxicology,* 14(12):1255-1271, 2018
5. S Shaneh, F Shokrollahi, P Shokrollahi, H Yeganeh, H Omidian: Structural Engineering to Control Density, Configuration, and Bioactivity of the PEG-Grafted Polyurethane Urea (PUU) Scaffolds, *Journal of Bioactive and Compatible Polymers*, 34(2), 209-223, 2018
6. M Ashkani, K Kabiri, A Salimi, H Bouhendi, H Omidian: Hybrid Hydrogel Based on Pre-Gelatinized Starch Modified with Glycidyl-Crosslinked Microgel, *Iranian Polymer Journal*, 27(3), 183-192, 2018
7. N Moniri, K Kabiri, MJ Zohuriaan-Mehr, H Omidian, N Esmaeili: Fine-Tuning of SAP Properties Via Epoxy-Silane Surface Modification, *Polymers for Advanced Technologies*, 28, 1132-1147, 2017
8. S Shahi, MJ Zohuriaan-Mehr, H Omidian: Antibacterial Superabsorbing Hydrogels with High Saline-Swelling Properties without Gel Blockage-Towards Ideal Superabsorbents for Hygiene Applications, *Journal of Bioactive and Compatible Polymers,* 32(2), 128-145, 2017
9. D Mastropietro, S Muppalaneni, H Omidian: Deterred Drug Abuse Using Superabsorbent Polymers, *Expert Opinion on Drug Delivery*, 13(11), 1523-1531, 2016
10. S Muppalaneni, D Mastropietro, H Omidian: Crush Resistance and Insufflation Potential of Poly(Ethylene Oxide)-Based Abuse-Deterrent Formulations, *Expert Opinion on Drug Delivery*, 13(10), 1375-1382, 2016

RECENT BOOK CHAPTERS

1. S Alaei, N Babanejad, R Ahmad, H Omidian: Polymers and Hydrogels to Deter Drug Abuse in *Engineering Drug Delivery Systems*, Chapter 10, A Seyfoddin (Ed.); Elsevier, in Press, Nov 2019
2. D Mastropietro, K Park, H Omidian: Polymers in Oral Drug Delivery in *Comprehensive Biomaterials II*, Volume 4 (Biocompatibility, Surface Engineering, and Delivery of Drugs, Genes and Other Molecules), Chapter 4.23 (Pages 430-444), P Ducheyne (Ed.); Elsevier (publisher), 2017
3. H Omidian, K Park: Superporous Hydrogels for Drug Delivery Systems in *Comprehensive Biomaterials II,* Volume 1 (Metallic, Ceramic, and Polymeric Biomaterials), Chapter 1.30 (Pages 688-704); P Ducheyne (Ed.); Elsevier (publisher), 2017
4. H Omidian, K Park, P Sinko: Pharmaceutical Polymers in *Martin's Physical Pharmacy and Pharmaceutical Sciences*, 7th Edition, Chapter 21, 561-584; P Sinko (Ed.); Wolters Kluwer (publisher), 2016

RECENT CONFERENCE PRESENTATIONS

1. R Ahmad, Y Joshi, H Omidian: Rigid Structure Polymers for the Development of Safe and Effective Opioid Drug Formulations, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
2. R Ahmad, Y Joshi, H Omidian: In Vitro Evaluation and Stability of the Deterrence Performance of Dextromethorphan HBr-AcDiSol® Complex Tablets, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
3. R Ahmad, Y Joshi, H Omidian: Development and Stability of an Extraction Resistant Drug Formulation Containing Crosslinked Poly(Acrylic Acid), American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
4. R Ahmad, R Forbes, H Omidian: Mixture Optimization of Abuse Deterrent Hybrids by Minitab Experimental Design and Analysis, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
5. R Ahmad, B Caturano, C Crum, R Forbes, H Omidian: Abuse-Deterrent Therapeutic Complexes of Dextromethorphan and Crosslinked Starch and Cellulose Derivatives, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
6. R Ahmad, C Crum, B Caturano, H Omidian: Crosslinked Carboxymethyl Starch and Carboxymethyl Cellulose-Based Formulations: An Innovative Approach to Deter Opioid Drug Abuse, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
7. S Alaei, R Ahmad, H Omidian: Flow Behavior of the Crosslinked Acrylic Acid Polymers Commonly Used in the Pharmaceutical Dosage Forms, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
8. S Alaei, R. H Omidian: The Effect of Crosslinker Type and Density on the Rheological Behavior of the Carbomers Used in the Formulation of Pharmaceutical Semi-Solids, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
9. S Muppalaneni, D Mastropietro, S Alaei, H Omidian: Water-Insoluble Thermoplastic and Ionic Polymer Hybrids to Deter Drug Abuse, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019

10. S Muppalaneni, D Mastropietro, N Babanejad, H Omidian: Abuse deterrent compositions of poly(ethylene oxide) and crosslinked carboxymethylcellulose, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
11. N Babanejad, H Omidian: Thermal Manipulation and Deterrent Properties of Tablets Containing High Molecular Weight Poly(ethylene oxide) (PEO), American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
12. N Babanejad, A Farhadian, MR Nabid, H Omidian: A Novel Sunflower Oil-based Polyol Urethane for Olanzapine Delivery, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
13. N Babanejad, S Faraji, M Khoobi, MR Nabid, H Omidian: Multifunctional Magnetic Fe3O4 Nanoparticles Coated with Poly(ethylene imine)-Succinic Anhydride Modified with 2,3,5-Triiodobenzoic Acid as CT and MRI Contrast Agents, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
14. N Babanejad, R Farhadian, MR Nabid, H Omidian: Designing a Novel High Hydroxyl Oil-based Polyol as a Drug Delivery Carrier, American Association of Pharmaceutical Scientists (AAPS), San Antonio, Texas, 2019
15. R Ahmad, S Alaei, H Omidian: Probe Penetration Method to Characterize Low Solid High Viscous Pharmaceutical Gel Compositions, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
16. R Ahmad, S Alaei, H Omidian: Effect of Crosslink Density and Concentration on Rheological Properties of Crosslinked Acrylic Acid Homopolymers, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
17. S Alaei, R Ahmad, H Omidian: Herschel-Buckley Model Describing the Rheology of Polyacrylates Superabsorbent Homopolymers, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
18. S Alaei, R Ahmad, H Omidian: Rheological Behavior and Modelling of Hydrophobically-Modified Gelling Agents Used in Pharmaceutical Semi-Solids, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
19. Y Joshi, R Forbes, H Omidian: Effect of Shear Stress History on Polymer Solution Aspiration, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
20. Y Joshi, R Forbes, H Omidian: Determining Syringeability by Measuring Aspiration Volume of Polymer Solutions at Different Temperatures, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
21. Y Joshi, R Forbes, H Omidian: Effect of Temperature on Gelation Properties of Cellulose Derivatives, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
22. R Forbes, Y Joshi, H Omidian: Minimizing Drug Extraction via Simultaneous Binding and Coagulation, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
23. Y Joshi, R Forbes, H Omidian: Effect of Thermal History on Abuse Deterrence Performance, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
24. R Ahmad, B Caturano, H Omidian: A Dual Mechanism to Deter Intravenous Drug Abuse Using Crosslinked Anionic Polymers, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
25. R Ahmad, C Crum, H Omidian: Opioid Complexation and Abuse Performance of Crosslinked Cellulose and Starch Derivatives, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
26. B Caturano, R Ahmad, C Crum, H Omidian: Structural Factors Affecting Abuse Performance of Common Pharmaceutical Superdisintegrants, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
27. R Ahmad, C Crum, H Omidian: Therapeutic Polymers to Deter Intravenous Drug Abuse, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018

28. R Ahmad, C Crum, H Omidian: In-Vitro Drug Release from Abuse-Deterrent Therapeutic Polymers, NSU College of Pharmacy's HPD Research Day, Fort Lauderdale, FL, Feb 2018
29. S Vempati, Y Joshi, H Omidian: Texture Analyzer to Evaluate Disintegration Performance of Pharmaceutical Superdisintegrants Under Simulated Gastric Conditions, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
30. S Vempati, Y Joshi, H Omidian: Measuring the Effect of Alcohol on Swelling and Disintegration Behavior of Various Superdisintegrants, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
31. S Mondal, Y Joshi, H Omidian: Drug-Polymer Complexation, An Effective Technique to Deter Drug Abuse by Injection, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
32. Y Joshi, S Muppalaneni, S Vempati, H Omidian: Drug Release and Crush Resistance Properties of Plasticized Abuse Deterrent Compositions, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
33. Y Joshi, S Muppalaneni, S Mondal, H Omidian: Thermal Manipulation of Plasticized Abuse Deterrent Compositions, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
34. Y Joshi, S Muppalaneni, H Omidian: Effect of Milling Method and Milling Time on Crush Resistance Performance of Plasticized Abuse Deterrent Tablets, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
35. C Crum, R Ahmad, H Omidian: Dextromethorphan-Sodium Starch Glycolate Complex with Abuse-Deterrent Properties, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
36. R Ahmad, C Crum, H Omidian: Drug Release Evaluation of a Carboxymethyl Starch-Based Abuse Deterrent Formulation, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
37. R Ahmad, D Mastropietro, H Omidian: Sequestered Bentonite to Deter Drug Abuse and Maintain Therapeutic Use, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017
38. R Ahmad, S Muppalaneni, C Crum, H Omidian: Effect of Thermal Treatment on the Binding Efficiency of Carboxymethyl Starch, a Potential Deterrent Agent for Intravenous Abuse, South Florida Section of *American Chemical Society* (SoFL-ACS), Nova Southeastern University, Fort Lauderdale, FL, 2017