OMATHANU "OM" PERUMAL, Ph.D.
Associate Dean for Research
Director, Haarberg Center for Drug, Disease and Delivery
College of Pharmacy & Allied Health Professions
South Dakota State University (SDSU)

PROFESSIONAL SUMMARY

Seventeen years of academic, research, and leadership experience with a strong track record of building high-performing teams and multi-disciplinary programs through strategic collaborations and partnerships. Leadership experience of working with multiple health disciplines including pharmacy, pharmaceutical sciences, public health, medical laboratory science, and respiratory care. Strong experience in developing multidisciplinary academic and research programs. Experience in developing and implementing strategic plans at the College and University level. Experience in developing and managing budgets through diversified revenue streams and realizing efficiencies through cost-sharing. Strong track record of fundraising to advance strategic initiatives. A leadership style that is centered on people and processes to maximize performance through active engagement and teamwork. Possess strong people skills, communication skills, and problem-solving skills required to move the institution forward and realize the shared vision.

EDUCATION & TRAINING

B.Pharm.	Pharmacy (1995), Dr. M.G.R. Medical University, Chennai, India
M.Pharm.	Pharmaceutics (1997), Birla Institute of Technology, Ranchi, India
Ph.D.	Pharmaceutics (2002) National Institute of Pharmaceutical Education & Research Mohali, India
Postdoctoral Scholar	Department of Pharmaceutical Sciences (2003), University of Kentucky, Lexington, KY
Postdoctoral Fellow:	Department of Pediatrics (2004), Children's Hospital Michigan, Wayne State University, Detroit, MI

PROFESSIONAL EXPERIENCE

Associate Dean for Research	2021-present, College of Pharmacy & Allied Health Professions, South Dakota State University, Brookings, SD
Department Head	2013-2021, Department of Pharmaceutical Sciences, South Dakota State University, Brookings, SD
Director	2021-Present, Center for Drug, Disease and Delivery, South Dakota State University, Brookings, SD

Graduate Program Coordinator	2017-2020, Department of Pharmaceutical Sciences, South Dakota State University, Brookings, SD
Director	2013-15, Translational Cancer Research Center, South Dakota State University, Brookings, SD
Associate Director	2011-12, Translational Cancer Research Center, South Dakota State University, Brookings, SD
Professor	2013-Present, Department of Pharmaceutical Sciences, South Dakota State University, Brookings, SD
Associate Professor	2009-2012, Department of Pharmaceutical Sciences, South Dakota State University, Brookings, SD
Associate Professor	2005-2008, Department of Pharmaceutical Sciences, South Dakota State University, Brookings, SD
Research Scientist	2002; Ranbaxy Research Laboratories, Gurgaon, India
Lecturer	1997; Ultra College of Pharmacy, Madurai, India

ADMINISTRATIVE & LEADERSHIP EXPERIENCE

South Dakota State University (2005-present)

Associate Dean for Research, College of Pharmacy & Allied Health Professions (2021-Present)

- Oversee the research and scholarship program in three departments including pharmaceutical sciences, pharmacy practice and population and allied health.
- Developed a broad research and scholarship agenda for the college including scholarship of teaching and learning, pharmaceutical sciences, population health and practice-based research.
- Cultivate and support faculty research and scholarship spread across three different sites.
- Developed and implemented a 'lunch and learn' research development seminar series for faculty and researchers.
- Support the two research centers in the college.
- Assembled teams for high impact proposals and projects.
- Build external partnerships in academic, professional and industry sectors.
- Provide Pre- and post-award grant management support to faculty.
- Supervise the grant proposal specialist, a shared position with the College of Arts and Humanities.
- The college's annual grant funding is around $2.5 million.
- Worked with the Dean, Provost, and the Development Director to secure a planned gift ($11.5 million) for a named drug development center (3D center).
- Member of the taskforce to develop a white paper on the University's Research Resilience
- Member of the University Strategic Planning committee for Research, Scholarship and creative activities.

Director, Center for Drug, Disease and Delivery (2021-Present)

- The primary objective of the state funded center is to develop an integrated Drug, Disease and Delivery (3D) framework for drug development and build University-Industry-Clinical (UIC) partnerships to accelerate the translation of new treatments for cancer and other diseases.
- Provide scientific and administrative leaderships for this multi-institutional collaborative research center.
- The center includes researchers from three Universities in the state, two large health systems and multiple industry partners.
- Manage an annual budget of $900,000 for the center.
- Developed and implemented a pilot grant program to promote interdisciplinary and inter-institutional research in human and animal health.
- Responsible for reviewing, approving, and monitoring the progress of research projects in the center.
- Foster research entrepreneurship and strengthen biomedical workforce in the state.
- Convene the Center advisory committee and executive committee meetings. The advisory committee consists of academic scientists, industry experts, University administrators and representatives from the Governor's office of Economic development.
- Represent the center to both internal and external stake holders including state legislators Governor's office of economic development and Board of Regents.
- Worked with the Dean and Development director and to secure donor funding for the research center ($1.1 million).

Department Head, Department of Pharmaceutical Sciences (2013- Aug 2021)

- Responsible for overseeing academic (BS/PharmD and PhD) and research programs in the Department.
- Supervised 10 tenure-track faculty, 4 research staff, and one support staff.
- Responsible for managing 25 B.S (Pharmaceutical Sciences), professional PharmD, M.S. and Ph.D. courses in pharmaceutical sciences.
- Managed an annual operating budget of $1.5 million.
- Lead the efforts to develop and implement multiple interdisciplinary/interprofessional teaching initiatives and new teaching pedagogies in the BS, PharmD and PhD programs.
- Worked closely with the Associate Dean of Academic affairs to develop and implement the new curriculum for BS and PharmD programs.
- College has the national distinction of consistently achieving high first-time pass rate (97-100%) in the Pharmacy Licensure exam.
- Worked closely with the Associate Dean of student affairs in student recruitment, retention and developing a student success model for BS and PharmD program.
- Closely involved in developing strategic enrollment plan for the BS and PharmD program.
- Actively involved as a member the College executive team in self-study for accreditation of professional Doctor of Pharmacy program. Currently, co-chairing a self-study subcommittee for sections 14-17 on student services.

- Worked with the Associate Dean of Academic Affairs to develop a planning document for a new B.S. program in pharmacology and toxicology.
- Lead the development of a new M.S. Program in Pharmaceutical Sciences with multiple tracks (thesis, non-thesis options and an online option).
- Worked with the Department of Veterinary and Biomedical Sciences to offer Pharmacology courses for the Veterinary medicine program.
- Since 2013, the department's average annual research funding has doubled from less than $0.5 million to $1 million through graduate student growth, strategic investments and new faculty hires.
- Increased student enrollment in the PhD program in pharmaceutical sciences.
- Increased student retention from 70 to 80% in the PhD program in pharmaceutical sciences by streamlining the student admission and retention process.
- Developed a new master's program in pharmaceutical sciences with thesis and non-thesis options
- Developed a 3D (Disease, Drug and Delivery) framework to promote interdisciplinary research in pharmaceutical sciences.
- Developed and led interdisciplinary research collaborations with two large Health Systems (Avera Health and Sanford Health).
- Enhanced the research infrastructure by securing funds (~$700,000) for shared equipment and research space in the Department.
- Worked with the Dean, Development director and Alumni to secure funding for two endowed faculty positions ($3 million) and the research center ($1.1 million).
- Worked with the University foundation and alumni to raise scholarship ($80,000) for international students.
- Conceived and implemented a competitive research seed grant program ($50,000/year) for faculty.
- Developed the department standards and faculty workload policy by working closely with the faculty through shared governance.
- Developed and implemented faculty development initiatives (teaching and research) for junior and mid-career faculty.
- Created and secured funds for new professional and support staff positions including a new program assistant position, shared laboratory specialist and two graduate student lab managers.
- Organized a cross-cultural and diversity leadership workshop for college faculty, students, and staff
- Work closely with the Associate Dean of Research to coordinate and organize the Annual Pharmacy Research day and convocation in the College.
- Coordinate and organize the College Annual endowed Cancer Lecture Series in Pharmaceutical Sciences.
- Chaired the College Wellness task force to develop a plan for promoting a culture of well-being among students, faculty, and staff. Implemented several wellness initiatives for the College faculty and staff in five academic programs.
- Served in the Provost Department Head Advisory committee.

- Serve as a mentor for a new Department Head in the College.

Graduate Program Coordinator, Department of Pharmaceutical Sciences (2017-2020)

- Responsible for overseeing all aspects of graduate program including student admission, student support, annual review, and assessment.
- Prepare graduate student handbook and communicate graduate school policies to faculty and graduate students
- Assign and manage graduate teaching assistant for BS/PharmD courses.
- Implemented new graduate admission process for the PhD program in pharmaceutical sciences.
- Led the curriculum revision and implementation of the new curriculum and cocurricular activities for the PhD program in pharmaceutical sciences.
- Developed and implemented professional development programs for graduate students
- Coordinate the nominations for the graduate student of the year award
- Worked closely with the College Associate Dean for academic affairs and department faculty to revise and implement a new assessment plan for the PhD program in Pharmaceutical Sciences.
- Led the self-study for institutional review of the PhD program in pharmaceutical sciences.
- Enhanced diversity in the PhD program in pharmaceutical sciences
- Secured funds from the College for graduate teaching assistants.
- Served as an external reviewer for the graduate program in Pharmaceutical Sciences for Creighton University and Gulf Medical University.

Director, Translational Cancer Research Center (2013-15)

- Provided scientific and administrative leaderships for this inter-institutional collaborative research center between SDSU and Sanford Health.
- The center included multi-disciplinary researchers including basic and clinician scientists, faculty, and post-docs from SDSU and Sanford Health.
- Developed and managed an annual budget of $500,000.
- Responsible for review, approve and monitor the research projects in the center
- Led the intellectual property development and research commercialization efforts of the center.
- Formed and convened the Center advisory committee meetings. The advisory committee consisted of leading cancer scientists, University administrators and representatives from the Governor's office of Economic development.
- Represented the center to both internal and external stake holders including state legislators and Board of Regents.
- Facilitated the creation of university spin-off company and the licensing of three technologies developed by the center investigators.
- The outcomes from the center resulted in a 1:3 return on state investment in the form of external grant funding, patents, royalties and research productivity.
- The Center activities were sustained through external grant funding, private funding and institutional support.

Associate Director, Translational Cancer Research Center (2011-12)

- Responsible for assisting the Director with the administrative activities of the center.
- Represented the center to external and internal stake holders in absence of the Director
- Assisted the Center director with budget planning and project management.
- Compiled the annual progress report for presentation to the Board of Regents and State Legislators
- Coordinated the Center advisory committee meetings.

Other Leadership & Administrative Experience (2007-present)

- Served as Associate editor, Regional editor and Editor-in-chief of Journal of Biomedical Nanotechnology (2007-17; current impact factor: 5.058); As editor-in-chief, led an international editorial board including three regional editors and 11 associate editors. During my tenure as Editor-in-Chief (2011-17), the journal's impact factor increased from 1.5 to 5.
- Co-organized Pre-Gordon International Skin Trailblazer Workshop (2011) attended by over 100 researchers from US and Europe.
- Chaired a session on Nanomedicine and Biotechnology in China Nano Conference 2017.
- Chaired a mini-session on new teaching pedagogy at the 2017 Annual meeting of American Association of Colleges of Pharmacy.
- Participated in the Academic Leadership Fellow program of American Association of Colleges of Pharmacy (2012-13), and SDSU Leadership academy (2013-14).
- Participated in the University Philanthropy Academy (2018)
- University Representative, South Dakota Board of Regents Intellectual Property and Commercialization Council (2015-present)
- Organizing committee member, Annual South Dakota State University-Sanford Biomedical Research Symposium (2013-17)
- Chaired the Graduate studies and Research sub-committee for the College Strategic Plan (2017-18)
- Chaired multiple search committees for administrative and faculty positions in the College (2008-18).
- Chair, University Sigma Xi graduate student competition (2011)
- As Vice-Chair of the University International Committee (2016-present) involved in reviewing all aspects of the international programs including study abroad programs, academic and research programs with international Universities, and programs to support the recruitment and retention of international students, faculty, and staff.
- Member, Honors faculty advisory committee (2013- 2019).
- Member, Strategic Planning Committee for Honors College, and Office of International Affairs (2017-18).
- Member, University Graduate Council (2011-13).
- Organizing committee member, India Symposium (2011) organized by SDSU and South Dakota World Affairs Council.
- Organizing committee member for University 'They Call me Q', a diversity and inclusion stage show (2018)

- Organizing committee member for India Night at SDSU (2008-10; 2013-present), the largest international event in the campus with over 400 participants from University and the Brookings community.
- Organizing committee member for Saudi Night at SDSU (2015-2018); Over 250 participants from the University and the Brookings community.
- Member, University committee for developing strategic partnership with Indian Universities for international student recruitment, academic and research collaborations (2020-present).
- Member, Department Chair Programming committee, American Association of Colleges of Pharmacy (2019).
- Member, Executive committee, Graduate education Special Interest Group, American Association of Colleges of Pharmacy (2017-present).
- Section Co-Chair, Standards 14-17, Self-study for ACPE accreditation site visit (2021-present)
- Chair, Pharmaceutics Section, American Association of Colleges of Pharmacy (2022-23).
- Council of Dean's Taskforce for research and scholarship, American Association of Colleges of Pharmacy (2022-23).

HONORS AND AWARDS

- Global Achievement Award, Office of International Affairs, South Dakota State University, 2022.
- Distinguished Faculty Honoree, Van D., and Barbara B. Fishback Honors College Medallion Ceremony, 2020.
- Pat & Jo Canon Intellectual Property and Commercialization Award, South Dakota State University, 2016.
- Interview appeared in the Dermatopharmaceutics Focus Group Newsletter of American Association of Pharmaceutical Scientists, 2016.
- TechConnect National Innovation Award, 2014.
- Drug delivery technology developed in my laboratory received the 3rd prize in South Dakota Governor's Giant Vision Competition, 2013.
- Academic Leadership Fellow, American Association of Colleges of Pharmacy, 2012-13
- Faculty Scholar, College of Pharmacy, South Dakota State University, 2012-13
- F.O. Butler Excellence Award for Research, South Dakota State University, 2012
- Intellectual Property and Commercialization Award, South Dakota State University, 2010
- Idea Prize, Brookings Economic Development Corporation, 2009, 2012
- Distinguished Researcher Award, South Dakota State University, 2009
- Dr. Patricia Wexler Research Award from Skin Cancer Foundation, 2008

TEACHING EXPERIENCE

Undergraduate/
Professional Pharmacy

Program	Pharmaceutics I (3 credits, 2005-08; 2017-present) Pharmaceutics II (3 credits, 2005-present) Biopharmaceutics & Pharmacokinetics (4 credits,2005-15) Independent Study (1-3 credits, 2005-present)
Graduate Program	Advanced concepts in Pharmaceutics (3credits) Topics in Advanced Pharmaceutics (3credits) Introduction to Pharmaceutical Sciences (3credits) Techniques in Pharmaceutical Sciences (3 credits) Seminar (1 credit, 2007-2012) Independent Study (1-3 credits)

MENTORING EXPERIENCE

Department Head	Dr. Sharrel Pinto, Department Head for the Department of Allied and Population Health (2019-present**);** Dr. Hemachand Tummala, Interim Department Head, Pharmaceutical Sciences (2021-present)
Faculty	Dr. Hongwei Zhang, Assistant Professor, Department of Pharm. Sci., SDSU (2011-2014), Dr. Joshua Reineke Assistant Professor, Department of Pharm. Sci., SDSU (2015-19)
Post-doctoral Researchers	Dr. Samba Sivudu (2009-2010), Dr. Selvam Chellaiah (2011-2012), Dr. Ranjith Kumar (2010-2015), Dr. Umesh Gupta (2012-2013), Dr. Manju Saraswathy (2013-15), Dr. Suja Sen (2015)
Visiting Scientists	Dr. Eman Samy, Prof. of Pharmaceutics, Assuit University Egypt (2007- 08); Dr. Vibin Muthunayagam, Assistant Prof., Mahatma Gandhi University, Kerala, India (2016-17)
Graduate Students	Vamsi Venuganti (PhD, 2005-2010; Assistant Professor, BITS Hyderabad, India), Satheesh Podaralla (PhD, 2006-2011; Research Manager, Pfizer Inc), Robert Stearns (MS, 2009-10; PhD student, University of South Florida), Preety Sahdev (PhD, 2007-2012; Research Scientist, Allergan Inc.), Kaushal Kumar Dave (PhD, 2009-2015, Biopharmaceutics reviewer, US-FDA), Mohammed Alqhatani (PhD, 2010-2014; Assistant Professor, King Saud University, Saudi Arabia), Rajini Gollapudi (MS, 2010-11, Research Assistant, Zoetis) Fahd Emam Eisa (PhD, 2013-15, Assistant Professor, Assuit University, Egypt), Saiful Islam (PhD student, 2013-present), Mibin Joseph (PhD student, 2014-2019) Abusalam Alqahatani (PhD student, 2014-2019); Served in Graduate advisory committee of more than 20 Ph.D. and M.S. students
Undergraduate Students	Kristen Kramer (Joseph-Nelson Fellowship, 2007), Hey Sun Um (Joseph-Nelson Fellowship, 2007), Glen SanJuan (2010-11), Terry Hoffman (2011-12), Nicholas Hites (2011)

Pavan Kulkarni (2011-12), Jude Kaitlyn (2011), Sarvesh Kaushik (2010-11), Ashley Benda (2011-12), Hilary Schilla (2011-12), Dustin Schulz (2011-12), Morgan Peterson (Co-supervisor; Bentley Undergraduate Research Award 2010-11) Devesh Kaushik (2012-13), Pooja Patel (2012-2013); Hara Mushabir (2016-17), Benjamin Waletzko (2016-17) Casey Fanding (2016-18, Joseph-Nelson Fellowship), Nathan Tvedten (2018), Allie Thompson (2018)

PROFESSIONAL SERVICE

Editor-In-Chief Journal of Biomedical Nanotechnology (2011-2017)

American Editor Journal of Biomedical Nanotechnology (2010)

Associate Editor Journal of Biomedical Nanotechnology (2007-2008)

Grant Reviewer Prostate Cancer Research Program and Peer Reviewed Medical Research program, Medical Research and Development Command- Broad Agency Announcement, Department of Defense; National Institutes of Health (Breast Cancer Study Section and SBIR special emphasis panel); Canada Foundation for Innovation, Nova Scotia Health Research Foundation; Ohio Cancer Research Associates; STARS award-American Association of Government College of Pharmacy Alumni, Bangalore, India; New Investigator Program, American Association of Colleges of Pharmacy; 3R Research Foundation, Switzerland; King Abdulaziz City for Science and Technology, Saudi Arabia; Wellcome Trust, United Kingdom.

Academic Program Review Gulf University, UAE (Pharmaceutics Graduate Program Review); Creighton University (Pharmaceutical Sciences Graduate Program Review)

Journal Reviewer Journal of Pharmaceutical Sciences, International Journal of Pharmaceutics; European journal of Pharmaceutics & Biopharmaceutics, British Journal of Pharmacology, Journal of Investigative Dermatology; Journal of Controlled Release; Biomacromolecules; AAPS Journal; Current Drug Delivery; Pharmaceutical Research; Drug Development and Industrial Pharmacy; Biomaterials; Current Eye Research; Annals of Biomedical Engineering; Toxicology & Pharmacology; Bioorganic & Medicinal Chemistry; International Journal of Tuberculosis & Lung Diseases; European Journal of Medicinal Chemistry; Molecular Pharmaceutics; Nanomedicine; Nanoscale; Journal of Microencapsulation, PLoS One

Abstract Reviewer	Reviewed abstracts for AAPS Annual meeting *(*2006, 2007, 2008 & 2009) and Annual meeting of Controlled Release Society, (2011-13)
Ph.D. Thesis Examiner	All India Institute of Medical Sciences; Dr. M.G.R. Medical University; Manipal University; Anna University: Bharathidasan University, SASTRA University, India; National Institute of Pharmaceutical Education and Research, India; University of Queensland, Australia.
Professional organizations	Consumer and Diversified Programming Committee, Controlled Release Society (2011-14); Graduate studies and research special interest group, American Association of Colleges of Pharmacy (2014-present); Member, Pharmaceutics section (2013-present), American Association of Colleges of Pharmacy; Member, Dermatopharmaceutics section (2009-16), American Association of Pharmaceutical Scientists (2010-)

SERVICE IN UNIVERSITY/COLLEGE/DEPARTMENT COMMITTEES

1. **Chair, University Committees**: Sigma Xi Graduate Student Competition (2011-16); Department head 5-year review committee (2017); Search committee for the Director for Research integrity and compliance (2022-23)
2. **Chair, College/Department Committees:** College Strategic Planning Committee (2010-12), Department Strategic Planning Committee (2008-2012), College Wellness Task Force (2020-21), Co-Chair, Self-study for ACPE accreditation site visit (2021-present)
3. **Chair, Search committees:** Coordinator of graduate studies and research (2009); Faculty Search Committee (2010; 2011), Grant proposal specialist (2017-18); Assistant to the Dean (2018); Department Head for Pharmaceutical Sciences (2022)
4. **Membership/Service in External Committees:** Faculty Delegate for American Association of Colleges of Pharmacy (2012-13); Member, South Dakota Board of Regents Intellectual property, and commercialization council (2015-2018)
5. **Membership in University Committees**: Research Advisory Council (2008-2010); Graduate Council member (2010-12); Search Committee for Director of Technology Transfer (2010, 2012, 2018); University Counsel Search Committee (2011-12); University Faculty Development and Leadership Committee (2010-11); Grants Specialist Search Committee (2008); Organizing and review committee member for Eastern South Dakota Science and Engineering Fair (2007-2011); Charles L. Sewrey Faculty Colloquium Committee (2007-2009); Organizing committee, for a symposium on India, a rising global power (2009-10); Sigma Xi oral presentation judging committee (2010-present); Department Head advisory committee (2013-16), SDSU-Sanford Biomedical Symposium organizing committee (2014-16), Core Genomics Facility advisory committee (2011-15), Radiation Safety Committee (2011-present), Honors College Faculty advisory committee (2013- present), International Committee (2016-present), Search committee for Dean of College of Pharmacy & Allied Health Professions (2017-18), University Research Resilience Planning Taskforce (2022-23); University Strategic Planning Committee (2022-23).
6. **Membership in College Committees:** Tenure and Promotion Committee (Elected; 2011-12); Graduate Studies and Research Committee (2005-2008; 2012-Present); College Strategic

Planning Committee (2008-2010); Faculty Development Committee (2010-12); Pharmacy Practice Department Head Search Committee, (2007-08); College Governance Document Revision (2009-10); Self- Study for ACPE Accreditation (2008-09; 2012-14; 2019-); Search Committee for Assistant Department Head for Pharmacy Practice (2011-12), Curricular progression and variation committee (2013-present), Professional Pharmacy student admissions committee (2013-present), College council (2013-present), College Executive Leadership committee (2013-present), College Wellness Taskforce (2020-21).

7. **Membership in Department Committees:** Department Advisory Council (2009-12); Faculty Search Committee (2007-08)
8. **Faculty Advisor**: Indian Students Association (2007-2009, 2016-present), Saudi Students association (2015-present)

PROFESSIONAL AFFILIATIONS

- American Association of Colleges of Pharmacy
- American Association of Pharmaceutical Scientists
- International Federation of Pharmacy
- Controlled Release Society

INVITED PRESENTATIONS

1. Invited keynote (virtual) on "3D approach to oral drug delivery". Recent updates in Formulation, Optimization and Regulatory Perspectives, Organized by PSG College of Pharmacy, Coimbatore, India, Jan 4, 2022.
2. Invited keynote (virtual) on "Drug Discovery and Development" International Conference on Advances in Pharmaceutical and Health Sciences, Organized by KIET School of Pharmacy and Indian Institute of Toxicological Research, Lucknow, India, Oct 7, 2021.
3. Invited lecture (virtual) on "3D approach to oral drug delivery" International Conference on Advances in Pharmaceutical and Health Sciences, Organized by KIET School of Pharmacy and Indian Institute of Toxicological Research, Lucknow, India, Oct 8, 2021.
4. Invited lecture on "Food-grade biopolymer based nanocarriers for oral drug delivery applications" College of Veterinary Medicine, Kansas State University, Manhattan, KS, Mar 16, 2021
5. International Webinar on "3D approach to Drug Delivery" in the short term training program on Advances in Pharmaceutical formulations and regulatory pathways globally for small molecules, medical devices and biologics" Organized by Shri Vishnu College of Pharmacy, India, Feb 2021.
6. International Webinar on "Role of Biopharmaceutics in Drug Discovery and Development" Organized by Shri Vishnu College of Pharmacy, India, Jun 2020.
7. International Webinar on "Utilizing your Unique strengths for your Professional and Personal Development" Organized by K.M. College of Pharmacy, Madurai, India, Jun 2020.
8. Webinar on "Soft Skills for a Successful Career" Organized by Dhanalakshmi Srinivasan College of Pharmacy, Perambalur, India, May 2020.
9. Invited Plenary Lecture titled "Food-grade biopolymer based nanocarriers for oral drug delivery applications" at the Biomaterials International Conference in Fukuoka, Japan, Aug 2017.

10. Invited Lecture titled “Food-grade biopolymer based nanocarriers for oral drug delivery applications”” at the 7th China Nano Conference in Beijing, China, Aug 2017.
11. “Food-grade biopolymer based nanocarriers for oral drug delivery applications” Sichuan University, Chengdu, China, Aug 2017.
12. Panel Presentation: Innovation and Management of Intellectual Property, South Dakota State University-Avera Research Symposium, Oct 27, 2016.
13. Virtual Panel on University IP and commercialization, organized by Michigan State University, Oct 2016.
14. Invited talk titled “Protein Nano carriers for drug delivery applications” 9th World Drug Delivery Summit, New Orleans, Jun 30-July 2, 2016.
15. Invited Plenary lecture titled “Novel Topical Drug Delivery Approaches” at the Annual Pharmaceutics Meeting of Chinese Pharmaceutical Association & Annual meeting of China Chapter of Controlled Release Society, Hangzhou, China, Oct 2015.
16. Invited Plenary Lecture titled “Protein Nano carriers for drug delivery applications” at the Biomaterials International Conference, Kenting, Taiwan, June 2015.
17. Participated as a Panelist in the ‘Entrepreneurship: Inspiration and information’ organized by the South Dakota State University Graduate School, Brookings, SD, April 2015.
18. “Lessons Learned from University based Entrepreneurs” Commercialization Conference, South Dakota Board of Regents, Apr 15, 2014 (Panel Discussion)
19. “It can happen here” SDU-Avera Research Symposium on Protecting and Commercializing University and Health Care Collaborative innovations Sept 11, 2013 (Panel Discussion)
20. “Dendrimers as skin drug delivery vehicles” Department of Chemistry, Western Kentucky University, Bowling Green, KY, Sept 2013.
21. “Corn based biomaterial for drug delivery applications” Plenary Lecture at the Biomaterials Day organized by the Biomaterials Chapter of University of South Dakota, Sioux Falls, SD, May 2013.
22. “Beginning from the end and end with the beginning”. Pharmacy Department, Birla Institute of Technology and Science, Hyderabad, India, Dec 11, 2012.
23. “Corn based Protein Nanocarriers”. Department of Biomedical Engineering, University of South Dakota, Sioux Falls, SD, Oct 2012.
24. “Corn based Protein Nanocarriers”. Arvind Eye Research Foundation, Madurai, India, Jan 6, 2012.
25. “From Corn to Cosmetics”. 2nd Skin Trailblazer Pre-Gordon Conference workshop held at Embassy Suites, Boston, MA, Aug 5-7, 2011. I was one of the co-organizers of this workshop
26. “Skin Drug Delivery’ 4th Annual South Dakota Biotechnology Summit and Annual meeting held at Sioux Falls, SD Sept 2009.
27. “Transcutaneous iontophoretic delivery of antisense oligonucleotide using nanocarriers”. Gordon Research Conference on Barrier Properties of Skin, Waterville Valley, NH, Aug 2009.
28. “Skin Penetration of Polymers”, Pre-Gordon Conference of International Society of Skin Physiology and Pharmacology, Boston, MA, Aug 2009.
29. “Breaching the Skin Barrier”, Department of Biomedical Engineering, University of South Dakota, Sioux Falls, SD, Oct 2008.

30. “Role of Biopharmaceutics and Pharmacokinetics in Drug Discovery & Development”, K.M. College of Pharmacy, Madurai, India, Aug 2008.
31. “Role of Biopharmaceutics and Pharmacokinetics in Drug Discovery & Development”, Department of Pharmaceutical Chemistry, Vellore Institute of Technology, Vellore, India, Jul 2008.
32. “Intracellular Drug Delivery”, College of Pharmacy, Midwestern University, Chicago, IL, Feb 2005.
33. “Breaching the Skin Barrier”, College of Pharmacy, Temple University, Philadelphia, PA, Sept 2004.
34. “Transdermal Iontophoresis of Insulin”, Department of Chemical Engineering, Wayne State University, Detroit, MI, Nov 2003.

PATENTS & LICENSED TECHNOLOGIES

1. **Perumal, O.,** Podaralla, S., Kaushik, R. Method of forming non-immunogenic hydrophobic protein nanoparticles and uses thereof. *Patents issued in the US in 2014*, *Australia in 2014, Japan in 2015, China in 2016, South Korea in 2016, Canada in 2017 and India in 2018*. This technology is licensed to a Brookings based Start-up company, Tranzderm Solutions. ***The first technology licensed from SDSU***.
2. **Perumal, O.,** Podaralla, S. Polymer conjugated protein micelles*. Patent issued in the US in Canada in 2016, China, Europe and Israel in 2017*. (Licensed to Tranzderm Solutions, Brookings, SD)
3. **Perumal, O.,** Averineni, RK., Podaralla, S., Alqahatani, M. Protein Nanocarriers for topical delivery. *US Patent issued in Jan 2016* (Licensed to Tranzderm Solutions, Brookings, SD)
4. **Perumal, O.,** Dave, K., Dwivedi, C. and Santha, S. Composition and methods for localized drug delivery through mammary papillae. *US patent issued in Dec 2015.* (Licensed to Tranzderm Solutions, Brookings, SD)
5. **Perumal, O.,** and Averineni RK. Methods of treating skin disorders using nanoscale delivery devices and transdermal enhancing compositions. Patent Filed in Aug 2013 (Licensed to Tranzderm Solutions, Brookings, SD).
6. **Perumal, O.,** Alqahtani, M. Novel core-shell nanoparticles for oral drug delivery systems. *European Patent issued in 2017*. (Licensed to Tranzderm Solutions, Brookings, SD).
7. **Perumal, O.,** Muthunayagam, V., Alsharif, F.M., Islam, S. Method of forming zein nanoparticles for effective oral delivery of plant polyphenols. US provisional patent application filed in 2017.
8. **Perumal, O.,** Joseph, MK, Reineke, J. Methods and compositions for localized drug delivery to the breast. US provisional patent application filed in Oct 2019.

PUBLICATIONS (in reverse chronological order)

In some of the papers middle name ‘Pillai’ is used.

1. Joseph, M.K., Islam, M.S., Reineke, J., Hildreth, M., Woyengo, T., Pillatzki, A., Baride, A., ***Perumal, O.*** Intraductal Drug Delivery to the Breast: Effect of Particle Size and Formulation on Breast Duct and Lymph Node Retention. ***Mol. Pharm.*** 17, 2, 441-452, 2020.
2. Islam, M.S., Reineke, J., Kaushik, R., Woyengo, T., Baride, A., Alqahtani, M.S., ***Perumal, O.*** Bioadhesive food protein nanoparticles as pediatric oral drug delivery system. ***ACS Appl. Mater. Interfaces.*** 11: 18062-18073, 2019.

3. Dave, K., Alsharif, F., Islam, S., Dwivedi, C., ***Perumal, O.*** Chemoprevention of breast cancer by transdermal delivery of santalol through breast skin and mammary papilla (nipple). ***Pharm. Res.*** 34: 1897-1907, 2017
4. Alqahtani, M., Islam, M.S., Podaralla, S., Kaushik, R.S., Reineke, J., Woyengo, T., ***Perumal, O.:*** Food protein-based core-shell nanocarriers for oral drug delivery: Effect of shell composition on in vitro and in vivo functional performance of zein nanocarriers. ***Mol. Pharm.*** 14: 757-769, 2017.
5. Alsharif, F.M., Dave, K., Samy, A.M., Saleh, K.I., Amin, M.A., ***Perumal,O.*** Influence of hydroalcoholic vehicle on in-vitro transport of 4-hydroxy tamoxifen through the mammary papilla (Nipple). ***AAPS PharmSciTech*** 18: 1366-1373, 2017.
6. Dave, K., ***Perumal, O.*** Transpapillary (Nipple) delivery of macromolecules to the breast: Proof of concept study. ***Mol. Pharm***. 13: 3842–3851, 2016.
7. Dave, K., Averineni, R., Sahdev, P., ***Perumal, O.*** Transpapillary drug delivery to the breast; ***PLOS ONE*** 9(12): e115712. doi:10.1371/journal.pone.0115712, 2015.
8. Venuganti, V., Saraswathy, M., Dwivedi, C., Kaushik, R., ***Perumal, O.*** Topical Gene Silencing by iontophoretic delivery of antisense oligonucleotide-dendrimer nanocomplex: Proof of concept in a skin cancer mouse model. ***Nanoscale.*** 7, 3903-3914, 2015,
9. Vyas, A., Chaturvedi LS., **Perumal, O.,** Vyas, D. Applications of nanomedicine in breast cancer, detection, imaging and therapy. ***J. Nanosci. Nanotechnol*****.** 14, 1–11, 2014
10. **Perumal, O.,** Murthy, N., Kalia, Y. Transdermal drug delivery-past, present and future. ***Skin Pharmacol. Physiol.*** 26: 331-342, 2013.
11. Sahdev P., Podaralla., S., Kaushik, R., ***Perumal, O.***: Calcium Phosphate nanoparticles for transcutaneous vaccine delivery. ***J. Biomed. Nanotechnol.*** *9, 1-10, 2012.*
12. Podaralla., S., Averineni, R., ***Perumal, O.***: Synthesis of novel biodegradable methoxy poly(ethylene glycol)-zein micelles for effective delivery of curcumin. ***Mol. Pharm.*** 9: 2778-2786, 2012.
13. Podaralla., S., ***Perumal, O.***: Factors influencing the preparation of zein nanoparticles. ***AAPS Pharm. Sci. Tech****.* 3: 919-927, 2012.
14. Kumar, S., Sahdev, P., ***Perumal, O.,*** Tummala, H.: Identification of novel skin penetration enhancement peptide by phage display peptide library screening. ***Mol. Pharm.*** 9, 1320-1330, 2012*.*
15. Venuganti.,V., Hildreth, M., Guan, X., ***Perumal, O.***: Structure skin permeability relationship of dendrimers. ***Pharm. Res.*** 28: 2246-2260, 2011.
16. ***Perumal, O.,*** Michniak, B., Touitou, E., Roberts, M.: Skin Nanotechnology. ***J. Biomed. Nanotechnol****.* 6, 405-407, 2010.
17. Podaralla, S., ***Perumal, O.***: Preparation of Zein Nanoparticles by pH-controlled Nanoprecipitation. ***J. Biomed Nanotechnol*** 6: 312-317, 2010.
18. ***Perumal, O.,*** Khandare, J., Kolhe, P., Kannan, RM., Kannan, S., Lieh-Lai, M.: Influence of spacer and branching architecture on cell entry and activity of drug-polymer conjugates. ***Bioconjugate Chem.*** 20: 842-846 2009. (*Paper cited as 'Must Read' in Faculty Biology 1000*).
19. Venuganti, V., ***Perumal, O***: Effect of Dendrimer charge, generation and concentration on Skin Permeation of 5-Fluorouracil. ***J. Pharm. Sci.*** 98: 2345-2356, 2009.
20. Sarkar, M., ***Perumal, O.,*** Panchagnula, R.: Solid state characterization of Nevirapine**.** ***Ind. J. Pharm. Sci.*** 70: 619-630, 2008.
21. Venuganti, V., ***Perumal, O***: Effect of Poly(amidoamine) (PAMAM) Dendrimer on Skin Permeation of 5-Fluorouracil. ***Int. J. Pharm.*** 361:230-238; 2008.

22. ***Perumal, O.,*** Inagapolla, R., Kannan, RM., Kannan, S: Surface functionality influences cellular trafficking of dendritic nanomaterials ***Biomaterials*** 29:3469-3476, 2008. (*Paper cited as 'Must Read' in Faculty Biology 1000).*
23. Panchagnula, R., Bapurao, T., Raj, YA., ***Pillai, O.***.: Mefenamic acid: a new polymorph or crystal defect. **Pharm. Technol. (Europe).** 18.10 Oct p.41 (6), 2006.
24. Panchagnula, R., Bindra, P., Kumar, N., Dey CS., ***Pillai, O.***: Stability of insulin and its implications on transdermal iontophoretic delivery**. Die Pharmazie.** 61:1014-1018, 2006.
25. Varma, MVS., ***Perumal, O***., Panchagnula, R.,: Functional Role of P-glycoprotein in limiting peroral drug absorption: optimizing drug delivery. **Curr. Opin. Chem. Biol.** 10:1-7, 2006.
26. Kolhe, P., Khandare, J., ***Pillai, O.,*** Kannan, S., Lieh-Lai, M., Kannan, RM.: Design and biological evaluation of dendritic nanodevices for enhanced cellular delivery with a high drug payload. **Biomaterials** 27:660-669, 2006.
27. Khandare, J., Kolhe, P., ***Pillai, O.*** Kannan, S., Lieh-Lai, M., Kannan, RM.: Synthesis, cellular transport and activity of dendrimer-methylprednisolone conjugate. **Bioconjugate Chem.** 16:330-337, 2005.
28. Kannan, S, ***Perumal, O.,*** Khandare, Lieh-Lai, M., Kannan, RM., Khandare, J.: Enhanced delivery of anti-inflammatory drugs using novel dendritic nanopolymers. **Critical Care Med.** 32 (12) suppl: pA142, 2004.
29. Kolhe, P., Khandare, J., ***Pillai, O.,*** Kannan, S., Lieh-Lai, M., Kannan, RM.: Hyperbranched polymer-drug conjugates with high drug payload for enhanced cellular delivery. **Pharm. Res.** 21: 2185-2195, 2004.
30. Varma, MS., Khandavilli, S., Ashokraj, Y., Jain, A., Dhanikula, A., Sood, A., Thomas, N.S., ***Pillai, O.,*** Sharma, P., Gandhi, R., Agrawal, S., Nair, V., Panchagnula, R.: Biopharmaceutic classification system: A scientific framework for pharmacokinetic optimization in drug research. **Curr. Drug Metabol.** 5: 375-388, 2004.
31. ***Pillai, O***., Kumar N., Dey CS., Panchagnula, R.: Transdermal iontophoresis of insulin III: Influence of electronic parameters. **Methods Find. Exp. Clin. Pharmacol.** 26: 399-408, 2004.
32. ***Pillai, O.,*** Hamad, M., Crooks, PA, Stinchcomb, AL.: Physicochemical evaluation, *in-vitro* human skin diffusion and concurrent biotransformation of 3-O-alkyl carbonate prodrugs of naltrexone. **Pharm. Res.** 21: 1146-1152, 2004.
33. Agrawal, S., Ashokraj, Y., Bharatam, PV., **Pillai, O.,** Panchagnula, R.: Solid-state characterization of rifampicin samples and its biopharmaceutic relevance. **Eur**. **J. Pharm. Sci.** 22: 127-144, 2004.
34. ***Pillai, O.,*** Panchagnula, R.: Transdermal iontophoresis of insulin VI: Influence of pretreatment with fatty acids on rat skin. **Skin Pharmacol. Appl. Skin Phyisol.** 17: 289-297, 2004.
35. Panchagnula, R., Prakash, S., ***Pillai, O.,*** Agrawal, S, Raj, YA.: R. Solid state characterization of mefenamic acid. **J. Pharm. Sci.** 93: 1019-1029, 2004.
36. ***Pillai, O***., Nair V., Panchagnula, R.: Transdermal iontophoresis of insulin IV: influence of chemical enhancers. **Int. J. Pharm.** 269: 109-120, 2004.
37. ***Pillai, O***., Kumar N., Dey CS., Borkute, SD., Sivaprasad, N., Panchagnula, R.: Transdermal iontophoresis of insulin I: A study on the issues associated with the use of platinum electrodes. **J. Pharm. Pharmacol.** 55: 1505-1513, 2003.
38. ***Pillai, O****.,* Panchagnula, R.: Transdermal delivery of insulin from poloxamer 407 gel: *Ex-vivo* and *in-vivo* studies in rat using iontophoresis and chemical enhancers. **J. Control. Release** 89: 127-140, 2003.

39. ***Pillai, O***., Panchagnula, R.: Transdermal iontophoresis of insulin V: Effect of terpenes. **J. Control. Release** 88: 287-296, 2003.
40. ***Pillai, O***., Borkute, SD., Sivaprasad, N., Panchagnula, R.: Transdermal Iontophoresis of insulin II: Physicochemical considerations. **Int. J. Pharm.** 254: 271-280, 2003.
41. Varma, MVS., ***Pillai, O.,*** Kumar, N., Dey, CS., Panchagnula, R.: Electrochemical stability of insulin under iontophoretic conditions. **J. Pharm. Pharmacol.** 54: S7, 2002.
42. Gandhi, R., ***Pillai, O***., Thilagavathi, R., Gopalakrishnan, B., Kaul, CL., Panchagnula, R.: Characterization of azithromycin hydrates. **Eur**. **J. Pharm. Sci.** 16: 175-184, 2002.
43. ***Pillai, O***., Panchagnula, R.: Insulin therapies- past, present and future. **Drug Discov. Today**. 20: 1056-1061, 2001.
44. ***Pillai, O***., Nair, V., Jain A., Narisetty ST., Panchagnula, R.: Non-invasive transdermal delivery of peptides and proteins. **Drugs Fut**. 26: 779-79, 2001
45. ***Pillai, O***., Panchagnula, R.: Polymers in drug delivery. **Curr. Opin. Chem. Biol**. 5: 447-450, 2001. (***Number 5 in top 25 most downloaded articles in this journal***http://top25.sciencedirect.com/subject/pharmacology-toxicology-and-pharmaceutical-science/20/journal/current-opinion-in-chemical-biology/13675931/archive/35/).
46. ***Pillai, O***., Dhanikula, AB., Panchagnula, R.: Drug Delivery- an Odyssey of 100 years. **Curr. Opin. Chem. Biol**. 5: 439-446, 2001.
47. ***Pillai, O***., Nair, V., Borkute, S., Sivaprasad, N., Ramarao, P., Panchagnula, R.: A Modified radioimmuno assay for *in vitro* analysis of insulin. **Ind. J. Nucl. Med.** 15: 181-183, 2001.
48. Gandhi, R., ***Pillai, O***., Kaul, CL., Panchagnula, R.: Solid state characterization of azithromycin. **J. Pharm. Pharmacol**.52s: 83, 2000.
49. Nair, VB., ***Pillai, O***., Ramarao, P., Panchagnula, R.: Effect of ionic strength on transdermal iontophoresis of arginine vasopressin. **J. Pharm. Pharmacol**. 52s: 79, 2000.
50. ***Pillai, O***., Nair, VB., Ramarao, P., Panchagnula, R.: Effect of pH and electrode polarity on transdermal iontophoresis of insulin. **J. Pharm. Pharmacol.** 52s: 92, 2000.
51. Panchagnula, R., ***Pillai, O***., Nair, V., Poduri, R.: Transdermal Iontophoresis revisited. **Curr. Opin. Chem. Biol**. 4: 468-473, 2000.
52. Panchagnula, R., Jain, AK., ***Pillai, O***., Jaiswal, JK.: Nicotine Transdermal Systems: Pharmaceutical and Clinical aspects. **Methods Find. Exp. Clin. Pharmacol**. 22: 299-308, 2000.
53. ***Pillai, O***., Nair, VB., Panchagnula, R.: A comparative study of chemical vs iontophoretic enhancement through skin using ATR-FTIR. **J. Pharm. Pharmacol** 51s: 303, 1999.
54. ***Pillai, O***., Nair, V., Poduri, R., Panchagnula, R.: Transdermal Iontophoresis. Part II. Peptide and Protein delivery. **Methods Find. Exp. Clin. Pharmacol**. 21: 229-240, 1999.
55. Nair, V, *Pillai, O*., Poduri, R., Panchagnula, R.: Transdermal Iontophoresis. Part I. Basic Principles and Considerations. Methods Find. Exp. Clin. Pharmacol. 21: 139-151, 1999.

BOOK CHAPTERS

1. Bhushan, A., Garza, K.B., **Perumal, O.,** Das, S.K., Feola, D.J., Farrell, D., Birnbaum, A. Lessons learned from the COVID-19 pandemic and the implications for pharmaceutical graduate education and research. In: Updating and Innovating Health Professions Education: Post-Pandemic Perspectives. Edited by K.B. Garza, and C. Ford. IGI Global Publishing, Hershey, PA, pp 324-345, 2021.
2. Seefeldt, T., **Perumal, O.,** Tummala, H. Reshaping Pharmacy and Allied Health Education for a Post-Pandemic World Using Kotter's 8-step Change Model. In: Updating and Innovating

Health Professions Education: Post-Pandemic Perspectives. Edited by K.B. Garza, and C. Ford. IGI Global Publishing, Hershey, PA, pp 96-117, 2021.

3. Gupta, U., **Perumal, O.** Dendrimers and its biomedical applications in Natural and synthetic biomedical polymers. Edited by S. Kumbar, C. Laurencin, M. Deng, Elsevier Inc., Amsterdam, First edition, pp. 243-258, 2014.
4. **Perumal, O.,** Haywood, A., Glass, BD., Ho PC. Pharmacokinetics and biopharmaceutics in Multiple Choice Questions in Pharmaceutics. Edited by S. Garg, Pharmaceutical Press, London, UK, pp 41-86, 2011.
5. **Perumal, O.,** Podaralla, S. Pharmaceutics and drug delivery research. In: From getting started in research to presenting data in a scientific paper. Edited by G. Jagadeesh, Y.K. Gupta and A. Prakash, Wolters-Kluwer, India pp 111-126, 2010.
6. Podaralla, S.**, Perumal, O.** Protein based Nanoparticles. In: Nano particulate Drug Delivery Systems: II Formulation and Characterization Edited by Y. Pathak and D. Thassu, Informa Health Care, New York pp 67-89, 2009.
7. Venuganti, V., **Perumal, O.** Formulation and design of nano delivery systems for skin. In: Nano particulate Drug Delivery Systems: II Formulation and Characterization Edited by Y. Pathak and D. Thassu, Informa Health Care, New York pp 124-153, 2009.
8. **Perumal, O**., Podaralla, SK. Role of preformulation in development of solid dosage forms. In: Pharmaceutical Manufacturing Handbook, Edited by Shayne Gad, John Wiley & Sons, Inc., pp. 933-975, 2008.
9. Kannan, RM., **Perumal, O**., Kannan, S. Dendrimers and hyperbranched polymers for drug delivery. In: Biomedical applications of nanotechnology, Edited by V. Labhasetwar, D.L. Leslie-Pelecky John Wiley & Co, pp.105-129, 2007.
10. Kannan, RM., **Perumal, O**., Kannan, S. Cellular interactions of nano drug delivery systems. In: Force microscopy: Applications in biology and medicine, Edited by Bhanu P. Jena, Johann Karl H. Hoerber John Wiley & Sons, pp. 113-136, 2006.

PRESENTATIONS AT NATIONAL/INTERNATIONAL MEETINGS (in reverse chronological order)

1. Hansen, D.J., ***Perumal, O.,*** Hertler, A., Seefeldt T., Clem, J. Measurement of Well-being of Faculty and Staff within a College of Pharmacy. Virtual Pharmacy Education, July 13-31, 2020.
2. ***Perumal, O.,*** Clem, J., Guan, X., Ullom, K., Mort. J. Utilizing endowed positions to drive transformative change in teaching, research and practice. Annual meeting of American Association of Colleges of Pharmacy, Chicago, IL, July 2019.
3. Hansen, D.J., Clem, J., ***Perumal, O.,*** Daniel, J., Hertler, A., Seefeldt T. Measuring the overall wellbeing of pharmacy students. Annual meeting of American Association of Colleges of Pharmacy, Chicago, IL, July 2019.
4. Joseph, M.K., Reinke, J., ***Perumal, O***., Localized intraductal delivery to the breast. Annual meeting of American Association of Pharmaceutical Scientists, Washington, DC, Nov 2018.
5. Alqhatani, A., ***Perumal, O***., Influence of hydroalcoholic vehicles on transdermal delivery of chemopreventive agents to the breast. Annual meeting of American Association of Pharmaceutical Scientists, San Diego, CA, Nov, 2017.

6. Islam, M., ***Perumal, O***., Novel Protein-lipid nanoparticles for Oral Drug Delivery Applications, Annual meeting of American Association of Pharmaceutical Scientists, San Diego, CA, Nov 2017.
7. Joseph, M.K., ***Perumal, O***., Intraductal delivery to the breast: Influence of particle size on the distribution of nanoparticles in the breast. Annual meeting of Controlled Release Society, Boston, MA, July, 2017.
8. Islam, M., ***Perumal, O***., Food Biopolymers for pediatric oral delivery of fenertinide, Annual meeting of Controlled Release Society, Boston, MA, July, 2017.
9. Islam, M., ***Perumal, O***., Food Biopolymers for Oral Drug Delivery Applications, Annual meeting of National Biotechnology Conference, San Diego, CA, May 1-3, 2017 (**Poster selected for travel award from AAPS**)
10. Muthunayagam, V., Islam, M., Eisa F.E., Hermann, S., ***Perumal, O***., Food-Grade zein nanoparticles for Oral Drug Delivery of epigallocatechin-3-gallate (EGCG), Annual meeting of Society of Biomaterials, Minneapolis, MN, Apr 2017.
11. Islam, M., Alqahatani, M., Kaushik, R., Reineke, J., Tofuko, W, ***Perumal, O***., Food-Grade Protein Biopolymers for Oral Drug Delivery Applications, Annual meeting of Society of Biomaterials, Minneapolis, MN, Apr 2017.
12. Islam, M., Alqahatani, M., Kaushik, R., Reineke, J., Tofuko, W, ***Perumal, O***., Food-Grade Protein Biopolymers for Oral Drug Delivery Applications, Annual meeting of American Association of Pharmaceutical Scientists, Denver, CO, Nov 2016 (**Poster selected for travel award from AAiPS**)
13. Elsharif F, ***Perumal O.*** Topical delivery of 4-Hydroxy Tamoxifen to the Breast: Influence of chemical and physical enhancement methods. Annual meeting of American Association of Pharmaceutical Scientists, Denver, CO, Nov 2016.
14. Islam, M., Alqahatani, M., Kaushik, R., Reineke, J., Tofuko, W, ***Perumal, O***., Food-Grade Biopolymer Based Novel Core-Shell Nanoparticles for Oral Delivery, 3rd Annual Biopharmaceutical Research & Development Symposium UNMC, Omaha, NE, Sept 14-15, 2016. (**Oral presentation**)
15. Islam S, Alqahatani M, ***Perumal O***. Novel protein based nanocarriers for oral drug delivery, National Biotechnology Conference, American Association of Pharmaceutical Scientists, Boston, MA, May 2016. (**Selected for AAPS travel award**).
16. Islam, M., Reineke, J., Tofuko, W, ***Perumal, O***., Food-Grade Biopolymer Based Novel Core-Shell Nanoparticles for Oral Delivery, Poster Presentation, Gordon Research Conference on Drug Carriers in Biology and Medicine, Waterville Valley, NH, August 2016.
17. Seefeldt TM, Mort JR, Laible BR, Hedge DD, Clem JR, ***Perumal O***. Development of an interdepartmental project to increase teaching collaboration and promote active learning. Annual Meeting of the American Association of Colleges of Pharmacy, Anaheim, CA, July 2016
18. Farver, D., Kappes, J., Hayes, W., An, W., Reineke J., ***Perumal, O***., Pain Medications:Application of Pharmaceutical Science Concepts to Patient Cases in Therapeutics, Poster Presentation, American Association of Colleges of Pharmacy Annual Meeting, Anaheim, CA, July 2016.

19. Elsharif F, Dave K, ***Perumal O.*** Topical delivery of 4-Hydroxy Tamoxifen to the Breast, Annual meeting of American Association of Pharmaceutical Scientists, Orlando, FL, Oct 2015.
20. Islam S, Alqahatani M, ***Perumal O***. Protein carriers for oral drug delivery Applications, Midwest Regional American Chemical Society Meeting, Oct 21-24, 2015, St. Joseph, MO. (**Invited oral presentation**).
21. Islam, S., Alqahatani, M., ***Perumal O*****.** Zein based protein nanoparticles for oral drug delivery, National Biotechnology Conference, American Association of Pharmaceutical Scientists, San Francisco, CA, June 2015. (**Selected for Formulation design and development Travel Award**)
22. Dave, K., Dwivedi, C., ***Perumal, O***. Topical Delivery of α-Santalol to the Breast via Mammary Papilla, Annual meeting of American Association of Pharmaceutical Scientists, San Diego, CA, November 2014.
23. Elsharif, F., Dave, K., ***Perumal, O.*** Transpapillary Delivery of 4-Hydroxy Tamoxifen to the Breast, Annual meeting of American Association of Pharmaceutical Scientists, San Diego, CA, November 2014.
24. Kaushal, D., ***Perumal, O***: Topical delivery of macromolecules to the breast through the nipple-areola complex. Poster presented at the **Annual Meeting of Controlled Release Society** held at Chicago, IL, July 2014.
25. Alqahatani, M., ***Perumal, O***. Novel Core-shell nanoparticles for oral drug delivery. Poster presented at the **Annual Meeting of Controlled Release Society** held at Chicago, IL, July 2014.
26. Kaushal, D., ***Perumal, O***: Nipple as a novel route for topical delivery of macromolecules to the breast. Poster presented at the **National Biotechnology Conference** held at San Diego, CA, May 2014. (***Selected for AAPS Travel Award***)
27. Kaushal, D., Averineni, R., ***Perumal, O***: Localized topical delivery of 5-fluorouracil via mammary papilla (nipple). Poster presented at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in San Antonio, TX, Nov 2013. (***Selected for AAPS Dermatopharmaceutics Section Travel Award***)
28. Averineni, R., ***Perumal, O***: Novel core-shell nanoparticles for topical delivery of methotrexate. Poster presented at the **Annual Meeting of Controlled Release Society** held in Honolulu, HI, July 2013.
29. Gupta, U., Sahdev, P., ***Perumal, O***: Multi-functional dendrimer based nanotherapeutic system for prostate cancer. Poster presented at the **Annual Meeting of Controlled Release Society** held in Honolulu, HI, July 2013.
30. Kaushal, D., ***Perumal, O***: Porcine mammary papilla is a suitable in-vitro model to study transmammary drug delivery through human mammary papilla. Poster presented at the **Annual Meeting of Controlled Release Society** held in Honolulu, HI, July 2013.
31. Alqahatani, M., ***Perumal, O***: Novel core-shell nanoparticles for oral pediatric drug delivery. Oral presentation at the **AAPS Pharmaceutics Graduate Scientific Research Meeting** held in University of Iowa, Iowa City, IA, Jun 2013.
32. Gollapudi, R., Averineni, R., ***Perumal, O***: Topical delivery of curcumin using liposomes. Poster presentation at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in Chicago, IL, Oct 2012.
33. Kaushal, D., ***Perumal, O***: Transmammary Drug Delivery. Poster presentation at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in Chicago, IL, Oct 2012 (**Selected for AAPS Physical Pharmacy and Biopharmaceutics Travel Award**)
34. Averineni, R., Benda, A., ***Perumal, O***: Topical delivery of curcumin using PEG-zein nanomicelles. Poster presentation at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in Chicago, IL, Oct 2012.

35. Sahdev, P., Kaushik, R., ***Perumal, O***: Transcutaneous vaccine delivery using cationic ethosomes and transferosomes. Poster presentation at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in Chicago, IL, Oct 2012.
36. Kaushal, D., ***Perumal, O***: A novel route for delivering therapeutics to the breast. Poster presented at the Graduate Symposium organized by **American Association of Pharmaceutical Scientists** in Omaha NE, July 2012.
37. Kaushal, D., ***Perumal, O***: Transmammary Drug Delivery. Presented at the **Annual Meeting of Controlled Release Society** held in Quebec City, Canada, July 15-18, 2012. (**Oral Presentation**)
38. Averineni, R., ***Perumal, O***: Novel PEG-zein nanomicelles for topical delivery of retinol. Poster presented at the at the **Annual Meeting of Controlled Release Society** held in Quebec City, Canada, July 15-18, 2012.
39. Gollapudi, R., Averineni, R., ***Perumal, O***: Topical delivery of curcumin using ethosomes. Poster presented at the **Annual Meeting of Controlled Release Society** held in Quebec City, Canada, July 15-18, 2012.
40. Podaralla, S., Averineni, R., ***Perumal, O.,*** Dwivedi, C: Formulation development and evaluation of nanostructured lipid carriers for topical delivery of honokiol. Poster presented at the **Annual Meeting of American Association of Cancer Researchers** held in Chicago, IL, Mar 31-Apr 4, 2012.
41. Kaushal, D., Dwivedi, C., ***Perumal, O***: Novel nanoemulsion containing flaxseed oil for topical application against cancer. Oral presentation at the **Annual Meeting of Flax Institute** held in Fargo, ND, Feb 2012. (**Oral Presentation**)
42. Averineni, R., ***Perumal, O***: Topical delivery of retinol using novel zein nanoparticles. Poster presented at the **Annual meeting of American Association of Pharmaceutical Scientists** held in Washington DC, Oct 2011.
43. Sahdev, P., Kaushik R., ***Perumal, O***: Calcium phosphate nanoparticles for transcutaneous vaccine delivery. Poster presented at the **Annual meeting of American Association of Pharmaceutical Scientists** held in Washington DC, Oct 2011.
44. Kumar, S., Sahdev, P., ***Perumal, O.,*** *Tummala, H.*: A novel peptide based skin penetration enhancer and its mechanism of action. Poster presented at the **Annual meeting of American Association of Pharmaceutical Scientists** held in Washington DC, Oct 2011.
45. Averineni, R., ***Perumal, O***: Topical delivery of retinol using novel zein nanoparticles. Poster presented at the **Annual meeting of American Association of Pharmaceutical Scientists** held in Washington DC, Oct 2011.
46. Averineni, R., ***Perumal, O***: Topical delivery of retinol using novel PEG-zein nanomicelles. Poster presented at the **Gordon Research Conference on Barrier Function of mammalian skin** held in Waterville Valley, NH Aug 7-12 2011.
47. Averineni, R., ***Perumal, O***: Novel Zein nanoparticles for topical delivery. Poster and oral Presentation at **Pre-Gordon Skin Trailblazer workshop** held in Boston, MA, Aug 5-7 2011.
48. ,Kumar, S., Sahdev, P., ***Perumal, O.,*** *Tummala, H.*: A novel peptide based skin penetration enhancer. Presentation at **Pre-Gordon Skin Trailblazer workshop** held in Boston, MA, Aug 5-7 2011.
49. Kaushalkumar, D., ***Perumal, O***: Transmammary Drug Delivery. Poster and oral Presentation at **Pre-Gordon Skin Trailblazer workshop** held in Boston, MA, Aug 5-7 2011.
50. Sahdev, P., ***Perumal, O***: Cationic based lipid based vehicles for skin penetration of macromolecules. Poster and oral Presentation at **Pre-Gordon Skin Trailblazer workshop** held in Boston, MA, Aug 5-7 2011.
51. Kumar, S., Sahdev, P., ***Perumal, O.,*** *Tummala, H.*: A novel peptide based skin penetration enhancer. Poster presented at the **AAPS- National Biotechnology Conference** held in San Francisco, LA, May 2011. (***Poster Selected for AAPS-Biotech Section Travel Award***)

52. Sahdev, P., Kaushik R., ***Perumal, O***: Non-invasive transcutaneous vaccine delivery system. Poster presented at the **AAPS- National Biotechnology Conference** held in San Francisco, LA, May 2011. (***Poster Selected for AAPS-Biotech Section Travel Award; Selected for SDSU Graduate School Travel Award***)
53. Podaralla, S., Hoffman, T., Kulkarni, P., ***Perumal, O***: Optimization of preparation of zein nanoparticles using Box-Behnken statistical design. Poster presented at *the* **AAPS**- **Annual Conference and FIP World Congress** held in New Orleans, Nov 14-18, 2010.
54. Sahdev, P., Kaushik R., **Perumal, O**: Simultaneous delivery of two macromolecules using cationic ethosomes. Poster presented at *the* **AAPS**- **Annual Conference and FIP World Congress** held in New Orleans, Nov 14-18, 2010. (***Poster Selected for AAPS-Biotech Section Travel Award***)
55. Kumar, S., Sahdev, P., Tummala, H., **Perumal, O**: Formulation optimization of poly(lactide-co-glycolide) nanoparticles for a model hydrophilic compound using factorial design. Poster presented at the **Annual Meeting of Controlled Release Society** held in Portland, OR, July 10-14, 2010
56. Podaralla, S., ***Perumal, O***: Doxorubicin loaded zein nanoparticles. Poster presented at the **Annual Meeting of Controlled Release Society** held in Portland, OR, July 10-14, 2010 (***Selected for CRS Travel Award***)
57. Sahdev, P., Kaushik R., **Perumal, O**: Simultaneous delivery of two macromolecules using cationic transferosomes. Poster presented at the **Annual Meeting of Controlled Release Society** held in Portland, OR, July 10-14, 2010.
58. Sahdev, P., Venuganti, V., Kaushik R., ***Perumal, O***: Simultaneous delivery of two macromolecules using liposomes. Poster presented at **AAPS**- **Annual Conference**, Nov 8-13, 2009, held in Los Angeles, CA. (***Poster Selected for AAPS-Biotech Section Travel Award***)
59. Venuganti, V., ***Perumal, O***: Transcutaneous Iontophoretic Delivery of Liposome-Oligonucleotide Complex. Poster presented at **Annual Meeting of American Association of Pharmaceutical Scientists**, Nov 8-13, 2009, held in Los Angeles, CA.
60. **Perumal, O.,** Venuganti, V., Kaushik, R., Dwivedi, C.: Transcutaneous iontophoretic delivery of antisense oligonucleotide using nanocarriers. Poster presented at the **Gordon Research Conference on Barrier Properties of Skin** held in Waterville Valley, NH Aug 9-14, 2009.
61. Podaralla, S., Kaushik, R., Venguanti, V., ***Perumal, O***: Role of particle size on phagocytic uptake and immunogenicity of protein based nanoparticles. Poster presented at **AAPS**-**National Biotechnology Conference**, Jun 25-28, 2009, held in Seattle, WA. (***Poster Selected for Amgen Travel Award***)
62. Venuganti, V., **Perumal, O**. Transcutaneous iontophoretic delivery of bcl-2 antisense oligonucleotide-dendrimer complex for skin cancer treatment. Poster presented at **AAPS**-**National Biotechnology Conference**, Jun 25-28, 2009, Seattle, WA. (***Poster Selected for Genetech Travel Award***)
63. Sahdev, P., Podaralla, S., Samy, E., ***Perumal, O***: Preparation and characterization of antigen loaded calcium phosphate nanoparticles. Poster presented at **Annual Meeting of American Association of Pharmaceutical Scientists**, Nov 16-20, 2008, Atlanta, GA, USA.
64. Podaralla, S., Kaushik, R., ***Perumal, O***: Preparation and characterization of zein nanoparticles for drug delivery applications. Abstract presented at **Annual Meeting of American Association of Pharmaceutical Scientists**, Nov 16-20, 2008, Atlanta, GA, USA. (***Poster selected for Astra Zeneca Travel Award***)
65. Venuganti, V., **Perumal, O**. Transcutaneous Iontophoretic Delivery of Antisense Oligonucleotides using Polyethyleneimine. Poster presented at **Annual Meeting of American Association of Pharmaceutical Scientists**, Nov 16-20, 2008, Atlanta, GA, USA.
66. Venuganti, V., **Perumal, O**. Influence of Dendrimer on Iontophoretic Delivery of Antisense Oligonucleotides through Skin. Poster presented at **AAPS**- **National Biotechnology**

Conference, Jun 25-28, 2008, Toronto, ON, Canada. (**Poster selected for AAPS Travel Award**)

67. Podaralla, Yong, Z., Seefeldt, T., ***Perumal, O***: Doxorubicin loaded zein nanoparticle. Poster presented at **39th Annual Pharmaceutics Graduate Student Research Meeting** (PGSRM), Jun 26-29, 2008, University of Michigan, Ann Arbor, MI.
68. Inagapolla, R., **Perumal, O.,** Kannan, S., Kannan, RM. Surface Functionality affects Transport Mechanisms of Dendrimer-Based Drug Delivery Nanodevices. Poster presented at the **Annual meeting of American Institute of Chemical Engineers** held in Salt Lake City, UT, Nov3-9, 2007.
69. Podaralla, SK, Venuganti, V., **Perumal, O**. Hydroxy apatite nanoparticles for transcutaneous iontophoretic delivery of macromolecules. **Annual Meeting of the American Association of Pharmaceutical Scientists**, Nov 11-15, 2007, San Diego, CA. (**Selected for Travel Award from SDSU graduate school**)
70. Venuganti, V., **Perumal, O**. Iontophoretic delivery of oligonucleotides (ODN) through skin using polymers and lipid carriers. **Annual Meeting of the American Association of Pharmaceutical Scientists**, Nov 11-15, 2007, San Diego, CA. (**Selected for Travel Award from SDSU graduate school**)
71. Venuganti, V., **Perumal, O**. Dendrimer mediated transdermal delivery of 5-fluorouracil. **Annual Meeting of the American Association of Pharmaceutical Scientists**, Nov 11-15, 2007, San Diego, CA.
72. Seefeldt, TM., Dwivedi, C., Davies, GE., Fahmy, HT., Guan, X., Malecki, M., Palakurthi, S., **Perumal, OP**., Houglum., Katz., BL. Pharmacy Student Participation in a Research Program. Poster presented at the **Annual Meeting of the American Association of Colleges of Pharmacy**, Orlando, Florida, July 14-17, 2007.
73. **Perumal, O,** Sarkar, M., Panchagnula R.: Recrystallization of Nevirapine from various solvents. Poster presented at the **Annual Meeting of American Association of Pharmaceutical Scientists** held at San Antonio, Oct 31-Nov 4, 2006.
74. **Perumal, O,** Khandare, J., Kolhe, P., Kannan, S., Lieh-Lai, M., Kannan, RM.: Effect of dendritic architecture and spacer on intracellular delivery of drug-polymer conjugates. Poster presented at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in San Antonio, Oct 31-Nov 4, 2006.
75. Panchagnula, R., Sarker, M., **Pillai, O**.: Solid state Characterization of nevirapine. Proceedings of **66th International Congress of FIP** held in Salvador Bahia, Brazil, Aug25-31, 2006.
76. Panchagnula, R., Bapurao, P., Ashokraj, Y., **Pillai, O**.: Mefenamic acid: an example of distinguishing new polymorph from already existing polymorph of improved crystallinity Mefenamic acid: new polymorph or crystal defect? Proceedings of **66th International Congress of FIP**, held in Salvador Bahia, Brazil, Aug25-31 2006.
77. **Perumal, O.,** Kannan, S., Kannan, RM.: Cell entry dynamics of polyamidoamine dendrimers. Poster presented at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in Nashville, TN, Nov, 2005.
78. Kannan, RM., **Perumal, O.,** Kannan, S: Cellular Interactions and Transport Mechanisms of Dendrimer-Based Nanodevices. Proceedings of **Annual meeting of American Institute of Chemical Engineers** held in Cincinnati, OH Nov, 2005.
79. Kannan, S, **Perumal, O.,** Khandare, J., Rajyalakshmi, I., Kannan, RM., Lieh-Lai, M.: Novel streptokinase loaded nanodevices for enhanced clot lysis. Proceedings of **Annual Chest Meeting** 126: 878S, Seattle, Washington, Oct 2004.
80. Kannan, RM., Inagapolla, R., **Pillai, O.,** Kannan, S., Lieh-Lai, M., Bassett, D.: Dendrimer-based nanodevices for asthma drug delivery: Synthesis, in-vitro and in vivo studies. Poster presented at the **Annual meeting of American Institute of Chemical Engineers** held in Cincinnati, OH Nov, 2005.

81. Rajyalakshmi, I., **Pillai, O.,** Khandare, J., Kannan, RM., Kannan, S.: Targeted delivery of thrombolytic agents using dendritic polymers. Poster presented at the **Annual meeting of American Institute of Chemical Engineers** held in Austin, Texas Nov, 2004.
82. Kannan, RM., Khandare, J., Kolhe, P., **Pillai, O.,** Kannan, S, Lieh-Lai, M.: Intracellular trafficking of dendritic biomaterials: Effect of architecture on polymer and drug conjugate transport. Poster presented at the **Annual meeting of American Institute of Chemical Engineers** held in Austin, Texas Nov, 2004.
83. Khandare, J., Kolhe, P., **Pillai, O.,** Kannan, S, Kannan, RM., Bassett, D., Lieh-Lai, M.: Tailored dendrimer-drug conjugates for asthma drug delivery: synthesis, in-vitro and in vivo studies. Poster presented at the **Annual meeting of American Institute of Chemical Engineers** held in Austin, Texas Nov, 2004.
84. **Pillai, O,** Khandare, J., Kolhe, P., Kannan, RM., Kannan, S., Lieh-Lai, M.: Intracellular drug delivery using high payload dendritic nanodevice. Poster presented at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in Baltimore, Nov 7-11, 2004.
85. Khandare, J., Kolhe, P., **Pillai, O.**, Kannan, S., Kannan, RM., Basett, D., Lieh-Lai, M.: Dendritic drug delivery systems with high drug payload for asthma. Poster presented at the **AAPS Pharmaceutics and Drug Delivery Conference** held in Philadelphia, Jun 7-9, 2004.
86. **Pillai, O,** Khandare, J., Kolhe, P., Kannan, RM., Kannan, S., Lieh-Lai, M.: Cell entry dynamics and activity of drug-hyperbranched polymer conjugates. Poster presented at the **AAPS Pharmaceutics and Drug Delivery Conference** held in Philadelphia, June 7-9, 2004.
87. Hamad, M., ***Pillai, O.,*** Stinchcomb, AL., Crooks, PA.: Carbonate ester prodrugs of naltrexone for transdermal delivery. Poster presented at the **Annual Meeting of American Association of Pharmaceutical Scientists** held in Salt Lake City, Utah, Oct 26-30, 2003.
88. Agrawal, S., ***Pillai, O***., Panchagnula, R.: Solid state characterization of mefenamic acid. Poster presented at the **53rd Indian Pharmaceutical Congress** held in New Delhi, from Dec. 21-23, 2001.
89. ***Pillai, O***., Nair, VB., Borkute, SD., Sivaprasad, N., Ramarao, P., Panchagnula, R.: Transdermal permeation of insulin using chemical enhancers and iontophoresis. Poster presented at the **53rd Indian Pharmaceutical Congress** held in New Delhi, from Dec. 21-23, 2001.
90. ***Pillai, O***., Nair, VB., Borkute, SD., Sivaprasad, N., Ramarao, P., Panchagnula, R.: Effect of fatty acids on transdermal permeation of insulin. Poster presented at the **53rd Indian Pharmaceutical Congress** held in New Delhi, from Dec. 21-23, 2001.
91. ***Pillai, O***., Nair, VB., Borkute, SD., Sivaprasad, N., Ramarao, P., Panchagnula, R.: Transdermal iontophoresis using continuous and periodic current application. Proceedings of **British Pharmaceutical Conference** held in Glasgow, UK from Sept. 23-26, 2001.
92. ***Pillai, O***., Nair, VB., Borkute, SD., Sivaprasad, N., Ramarao, P., Panchagnula, R.: Influence of terpenes on transdermal iontophoretic permeation of insulin. Poster presented at the **53rd Indian Pharmaceutical Congress** held in New Delhi, from Dec. 21-23, 2001.
93. ***Pillai, O***., Nair, VB., Ramarao, P., Panchagnula, R.: Influence of concentration and ionic strength on transdermal iontophoresis of insulin. Poster presented at the **3rd International Symposium on Advances in Technology & Business Potential of New Drug Delivery Systems** held in Ooty, India from Sept.30 to Oct-1, 2000.
94. Nair, VB., ***Pillai, O***., Ramarao, P., Panchagnula, R.: Modulation of electric parameters for transdermal iontophoresis of arginine vasopressin. Poster presented at the **3rd International Symposium on Advances in Technology & Business Potential of New Drug Delivery Systems** held in Ooty, India from Sept.30 to Oct-1, 2000.
95. Nair, VB., ***Pillai, O***., Ramarao, P., Panchagnula, R.: Effect of pH on transdermal iontophoresis of Arginine vasopressin. Poster presented at the **51st Indian Pharmaceutical Congress** held in Indore, India from Dec. 18-20, 1999.

96. ***Pillai, O***., Nair, VB., Borkute, SD., Ramarao, P., Panchagnula, R.: A Modified radioimmuno assay for *in vitro* analysis of insulin. Poster presented at the **51st Indian Pharmaceutical Congress** held in Indore, India from Dec. 18-20, 1999.
97. Nair, VB., ***Pillai, O***., Ramarao, P., Panchagnula, R.: Transdermal Iontophoresis of Arginine Vasopressin: *Ex-Vivo* studies. Poster presented at the **59th International Congress of FIP**, held in Barcelona, Spain from Sept. 5-10, 1999.
98. ***Pillai, O***., Panpalia, GM.: Studies exploring DSC as an instantaneous predictor of drug excipient interaction. Poster presented at the **49th Indian Pharmaceutical Congress** held in Trivandrum, India from Dec. 18-21, 1997.

GRANTS

1. Center for Drug, Disease, and Delivery.
Role: **Center Director**
Agency: South Dakota Board of Regents
Total award: $3,900,000 (Jul 2021- Jun 2026)
The primary objective of the proposed center is to develop an integrated Drug, Disease and Delivery (3D) framework for drug development and build academic-industry partnerships for accelerating the translation of new treatments for cancer and other diseases.

2. Cancer immunotherapy capacity building
Role: **Co-Principal Investigator**
Agency: South Dakota Board of Regents
Total award: $171,888 (Jan 2020- Dec 2021)
To enhance the research instrumentation for Cancer Immunotherapy Research in the Department of Pharmaceutical Sciences.

3. Enhancing the capacity and competitiveness of Cancer Research at South Dakota State University
Role: **Co-Principal Investigator**
Agency: South Dakota Board of Regents
Total award: $278,000 (Aug 2018- Jul 2020)
To support the upgradation of the animal cages in the University Animal facility and also will support the expansion of the research laboratory in the Department of Pharmaceutical Sciences.

4. Novel Polyphenol Fortified Profile Diet Formulation
Role: **Principal Investigator**
Agency: SDSU-Sanford Research Initiative
Total award: $96,663 (Sept 2015- Aug 2017)
To develop food-grade protein biopolymer based nanocarriers for enhancing the oral bioavailability of epigallocatechin and incorporate the encapsulated epigallocatechin in Sanford Profile diet formulations.

5. Topical Delivery of 4-hydroxy tamoxifen to the breast
Role: **Research Advisor**
Agency: Women in Giving, SDSU Foundation
Total award: $1,500 (Jan-Dec 2016)
This research grant is for supporting the graduate student's research project. The goal of this study was to develop topical formulations of 4-hydroxy tamoxifen and test the delivery and chemopreventive efficacy in a rat breast tumor model.

6. Acquisition of a high-resolution analytical transmission electron microscope
Role: **Co-investigator**
Agency: Major instrumentation grant, National Science Foundation
Total award: $775,155 (Sept 2015-16)
The goal of this collaborative grant with investigators from multiple departments and institutions in the state was to purchase a high-resolution transmission electron microscope for biomedical and agricultural research.

7. Bioengineering of milk proteins to design novel nanocarriers for drug delivery
Role: **Co-Principal Investigator**
Agency: Mid-west Dairy Association
Total award: $13,171 (Jan-Dec 2015)
To explore the feasibility of developing nanoparticles using milk proteins using curcumin as a model compound.

8. Novel intraductal delivery system for breast cancer
Role: **Research Advisor**
Agency: Women in Giving, SDSU Foundation
Total award: $500 (Jan-Dec 2015)
This research grant is for supporting the graduate student's research project. The goal of this study was to explore the feasibility of intra-ductal delivery of chemotherapeutic agents to the breast.

9. Therapy for Secondary Lymphedema in Breast Cancer
Role: **Consultant**
Agency: SBIR, Phase-I, National Institutes of Health
Total award: $155,000 (Jan-Dec 2014)
To develop a sustained release delivery system for growth factors using natural biodegradable protein biopolymer for regeneration of lymphatic vessels. The delivery system used in this project by the start-up company (Medgene Laboratories) was a delivery platform developed in my laboratory.

10. Novel topical therapeutic strategy for breast cancer
Role: **Research Advisor**
Agency: Women in Giving, SDSU Foundation
Total award: $2,000 (Jan-Dec 2014)
This research grant is for supporting the graduate student's research project. The goal of this study was to explore the feasibility of delivering compounds to the breast through topical application.

11. Developing an in-vivo imaging facility at South Dakota State University
Role: **Co-investigator**
Agency: South Dakota Board of Regents
Total award: $100,000 (Nov 2014-May 2016)
The goal of this collaborative grant with investigators from multiple departments was to purchase an in-vivo imaging equipment for biomedical, pharmaceutical and biological research. As the Department head, I worked with other departments to get matching funds ($75,000) to purchase this equipment.

12. Topical Delivery of anti-cancer agents

Role: **Principal Investigator**
Agency: Egyptian Cultural Mission Bureau, Washington D.C.
Total award: $20,000 (Nov 2013- Nov 2015)
This fund is for supporting the graduate student's research project. The goal of this study was to develop topical formulations for the delivery of anti-cancer agents to the breast.

13. Zein nanoparticles for topical drug delivery
Role: **Principal Investigator**
Agency: South Dakota Innovation Partners
Total award: $260,000 (Mar 2010-Mar 2013)
The goal of this industry funded project was to develop skin delivery systems for retinoids using zein nanoparticles.

14. Topical Delivery of chemopreventive agents to the breast
Role: **Principal Investigator**
Agency: Saudi Arabian Cultural Mission, Washington, DC
Total award: $5,000 (Aug 2014-Aug 2015)
This fund is for supporting the graduate student's research project. The goal of this study was to develop topical formulations for the delivery of chemopreventive agents to the breast.

15. Multifunctional nanotherapeutic system for advanced prostate cancer
Role: **Principal Investigator**
Agency: Prostate Cancer Research Program, Department of Defense
Total award: $105,153 (Sept 2011- Sept 2013)
The goal was to explore the feasibility of developing a dendrimer based multifunctional delivery system consisting of docetaxel and siRNA for eIF4E.

16. Pre-clinical studies of topical tetracycline formulation
Role: **Co-Principal Investigator**
Agency: pharmaCline LLC., Sioux Falls
Total award: $99,684 (Jun-Dec 2011)
The goal of this industry funded project was to study the in-vitro and in-vivo performance of topical tetracycline formulations.

17. Zein based nanoparticles for oral drug delivery applications
Role: **Principal Investigator**
Agency: Saudi Arabian Cultural Mission, Washington, DC
Total award: $100,000 (Mar 2010- Mar 2014)
This fund is for supporting the graduate student's research project. The goal of this study was to develop core-shell zein nanoparticles for oral drug delivery applications.

18. Novel nanomicellar skin delivery system for curcumin
Role: **Principal Investigator**
Agency: US Small Business Administration
Total award: $44,500 (Oct 2010-Jun 2011)
The goal was to develop and test curcumin encapsulated PEG-zein micelle delivery system for topical delivery through skin.

19. Translational Cancer Research Center
Role: **Director (2013-15), Associate Director (2011-12), Principal Investigator (2009-15)**
Agency: Research Commercialization Council, South Dakota Board of Regents

Total award: $2.39 million (Mar 2009-Jun 2015)
The goal of this multidisciplinary research center is to develop new chemopreventive and chemotherapeutic strategies for skin, breast, prostate and head/neck cancers. As one of the PI's in the center, I received $300,000 to develop drug delivery systems for anti-cancer agents.

20. Transcutaneous delivery of DNA-dendrimer complex using iontophoresis
Role: **Principal Investigator**
Agency: Research Support Fund, South Dakota State University
Total award: $7,500 (Mar 2009-Mar 2010)
The goal of this study was to test the feasibility of developing a topical gene therapy using dendrimer and iontophoresis.

21. Acquisition of Differential Scanning Calorimeter
Role: **Co-Principal Investigator**
Agency: United States Department of Agriculture
Total award: $50,530 (Jan-Dec 2009)
The goal of this collaborative grant with Department of Agriculture Engineering was to purchase Differential Scanning Calorimeter for pharmaceutical and food analysis.

22. Zein Nanoparticles for Drug Delivery Applications
Role: **Principal Investigator**
Agency: Competitive research seed grant, South Dakota Board of Regents
Total award: $193,000 (Aug 2008-Dec 2010)
The goal of this study was to develop and test zein nanoparticles for systemic drug delivery applications.

23. Feasibility study for topical delivery of azithromycin
Role: **Principal Investigator**
Agency: Minotech Engineering, Boston, MA
Total award: $3,500 (Apr-Jun 2008)
The goal of this study was to test the feasibility of developing a topical delivery system for azithromycin for tick-borne diseases.

24. Transcutaneous Delivery of Bcl-2 anti-sense oligonucleotide for skin cancer treatment
Role: **Principal Investigator**
Agency: Skin Cancer Foundation, New York, NY.
Total award: $10,000 (Apr 2008-Mar 2009)
The goal of this study was to develop Bcl-2 anti-sense oligonucleotide dendrimer complex and test its delivery, and efficacy in a skin cancer mouse model.

25. Dendritic Nanopolymers as Potential Drug Delivery Vehicles for Vascular Endothelial Cells
Role: **Principal Investigator**
Agency: Research Support Fund, South Dakota State University
Total award: $7,500 (Apr 2007-Mar 2008)
The goal of this study was to test the feasibility of using dendrimers for intracellular delivery to vascular endothelial cells.

26. Novel nanoparticles of corn protein, zein for intracellular delivery
Role: **Principal Investigator**
Agency: South Dakota Corn Utilization council

Total award: $74,000 (July 2006-Jun 2008)
The goal of this study was to explore the feasibility of developing zein nanoparticles and test the potential for intracellular drug delivery.

27. Dendritic nanopolymers as novel vehicles for Transdermal Drug Delivery
Role: **Principal Investigator**
Agency: Individual Research Seed Grant, South Dakota Board of Regents
Total award: $42,948 (Aug 2006-Aug 2007)
The goal of this study was to study the structure-permeability relationship of dendrimers for transdermal drug delivery applications.

28. Dendritic nanopolymers as transdermal permeation enhancers
Role: **Principal Investigator**
Agency: Seed Grant, Research Office, South Dakota State University
Total award: $9,500 (Sept 2005-Aug 2006)
The goal of this study was to study the skin permeation enhancing properties of dendrimers.