

MANAS MANDAL, M.Sc., Ph.D.

Fulbright Specialist

Roseman University of Health Sciences
College of Pharmacy
11 Sunset Way, Henderson, NV 89014
Tel: 702-968-1610; 702-782-7830 (cell) FAX: 702-990-4435
E-mail: mmandal@roseman.edu; mandalmanas@hotmail.com

Faculty Appointment

1. Associate Professor of Pharmaceutical Sciences, Roseman University of Health Sciences, College of Pharmacy: July 2011- June 2021.
2. Adjunct Associate Professor, Roseman University of Health Sciences College of Dental Medicine, 2009- present.
3. Adjunct Associate Professor, Roseman University of Health Sciences College of Medicine: Jan 2015- present.
4. Adjunct Faculty, Touro University Nevada: Sept 2013-present.
5. Adjunct Faculty, JSS Academy of Higher Education & Research, Mysuru, India: Dec 2018-2020.
6. Assistant Professor of Pharmaceutical Sciences, University of Southern Nevada College of Pharmacy, Henderson, NV: July 2006- June 2011.
7. Research Scientist, Department of Biomedical Sciences and Pathobiology, Virginia-Maryland College of Veterinary Medicine, Virginia Tech, Blacksburg, VA: May 2004- June 2006.
8. Research Investigator, Department of Pharmaceutical Sciences College of Pharmacy, University of Michigan, Ann Arbor, MI: May 2001- April 2004.

Fellowship

1. Postdoctoral Fellow, Department of Pharmaceutical Sciences College of Pharmacy, University of Michigan, MI, June 1997- April 2001.
2. Postdoctoral Fellow, Gwen Knapp Center for Lupus and Immunology Research and Department of Pathology, University of Chicago, Chicago, IL: December 1994- April 1997.
3. Research Fellow, Department of Microbiology and Immunology, the Chicago Medical School, North Chicago, IL: January 1993- December 1994.
4. Senior Research Fellow, Calcutta School of Tropical Medicine, Calcutta, India: 1991- 1992.
5. Junior Research Fellow, Calcutta School of Tropical Medicine and Indian Institute of Chemical Biology, Calcutta: 1987- 1991.

Education

Ph. D., Science, 1992, Jadavpur University, Calcutta, India.

M. Sc., Physiology (I class), 1985, Presidency College, University of Calcutta, India.

B. Sc., Physiology (Honors), 1983, City College, University of Calcutta, India.

Ph. D. Dissertation: Active immunization of rabbits and mice with gamma irradiated detoxified viper venom as toxoid.

Awards

- Fulbright Specialist, U.S. Department of State's Bureau of Educational and Cultural Affairs (ECA) and World Learning: August 9, 2019- August 9, 2022.
- Nehru-Fulbright Commission of US-India Educational Foundation (USIEF) approved the teaching proposal 'Infection, Immunity and Immune-based Therapeutics', Sept 2020.
- US Dept. of State Fulbright Commission completed the review and approved the proposal, May 2021. Scholarship will be released as travel is permitted during COVID-19.
- USN intramural grant. Project: 'Development of a cell-based assay system for immune response study', funded \$10,000, 2007-08.
- Upjohn and Vahlteich award, UM, College of Pharmacy. Project: 'Liposome-adjuvant-based vaccine delivery system', funded \$ 40,000, 2003-2004.
- Senior Research Fellowship, Indian Council of Medical Research, India. Project: 'Russell's viper venom vaccine development', 1991-1993.

Experimental Research

- Salivary biomarker research for determination of skeletal maturation in orthodontics patients. 2012-ongoing.
- 'Drug induced immune modulation' using 'statin' as a candidate drug: 2012 -ongoing.
- Study of immune response modifier drugs using a cell-based assay system: 2009 - present, College of Pharmacy, Roseman University.
- Subunit vaccine against tularemia, and O-antigen mutant of Francisella as avirulent and protective in nature: 2004-2006, Center for Molecular Medicine and Infectious Diseases, College of Veterinary Medicine, Virginia Tech, VA.
- Vaccine carrier-specific preexisting immunity in the development of vaccine antigen-specific immunity, comparative study of liposome-based cytosolic delivery of protein in macrophages and dendritic cells: 2001-2004, College of Pharmacy, University of Michigan, MI.
- Liposome-mediated cytosolic delivery of vaccine antigen priming anti-tumor and anti-viral protective CTL responses: 1997-2001, College of Pharmacy, University of Michigan, MI.
- MHC class Ib molecules, CD1 in NK T cell development, and H2-M3 in bacterial antigen presentation to T cells, generation of monoclonal antibody specific to CD1 & H2-M3: 1994-1997, Gwen Knapp Center for Lupus & Immunology, University of Chicago, IL.
- Purification and characterization of an immunosuppressive factor from murine fetoplacental unit: 1993-1994, The Chicago Medical School, IL.
- Snake venom vaccine development, detection of snake venom in patient serum, and epidemiology of snake-bite: 1987-1992, Calcutta School of Tropical Medicine & Indian Institute of Chemical Biology, India.

Educational Research

- Market trend analysis of biologicals.
- Student knowledge retention
- Early intervention in academic progression.
- Faculty perspective on research in teaching focused Colleges of Pharmacy.

Teaching

1. Primary instructor, block coordinator, and assessment leader for Hematology & Immunology block (PHAR 413) 2006- present: P1 students, Pharm. D. program, Roseman University COP at Henderson, NV & South Jordan, UT campuses.
2. Instructor for Clinical Immunology (PHAR 513) 2010-2014: P2 students at NV & UT campus.
3. Course developer and instructor for elective course 'Current Topics in Infection and Immunity' offered to P1 & P2 students: 2020-
4. Introduction to Immunology- a levelling/ primer course module developed for the incoming P1 students: 2020-
5. Instructor for College of Dental Medicine Orthodontic program (2010-present), and DDS program (2011-2018).
6. Instructor for Physician's Assistant & Doctor of Osteopathic Medicine program, Touro University Nevada, 2013-2014.
7. Visiting Professor, taught a course on Immunopathology and Immune-based therapeutics to the P4 students at Ohio Northern University, Ada, Ohio, November 2013.
8. Instructor & examiner of 'Immunology in Cellular and Molecular Approaches to Drug Delivery (PHAR 763)': Ph. D. program, UM College of Pharmacy, years 2001, 2002 and 2004.

Teaching Contents: College of Pharmacy

P1 students: PHAR 413, Hematology & Immunology

- Hematology Review: Components of Blood, Hematopoiesis & Erythropoiesis
- Components of Immune System
- Introduction to Immune System Function
- Recognition of Antigen
- Immune Tolerance
- Immunization
- Complement System and Immune Function
- Hypersensitivity Reactions: Types I, II, III & IV
- Autoimmune Diseases, Immunodeficiencies and Tissue Transplantation
- Biologics/ biosimilars targeting immune pathways

P2 students: PHAR 513, Clinical Immunology

- Immunology Review
- Systemic Lupus Erythematosus (SLE)

P1 & P2 students: PHAR 728, Current Topics in Infection & Immunity (elective)

- Review of human immune system
- Bacterial infection
- Viral infection
- Covid-19 pathophysiology, detection, treatment & vaccine development
- Vaccine-induced immunity
- Immunotherapy

Incoming P1 students: Introduction to Immunology (levelling course)

- Immune system cells, molecules & organs
- Innate immunity
- Adaptive immunity
- Vaccine

College of Dental Medicine

Residents of Orthodontic and Dentofacial Orthopedic program (ADE 932)

- Immunology Review and Mucosal Immunity
- Microbiology and Immunology of Dental Caries
- Microbiology and Immunology of Periodontal Diseases
- Allergies and Immunologic Diseases
- Antibiotics and Analgesics in Dentistry
- Oral Microbiology and Immunity
- D1 students: Microbiology and Immunology of Systemic and Oral Diseases (DMD5230)
- Autoimmune Diseases, Immunodeficiency Syndromes and Tissue Transplantation
- Allergies and immunologic diseases; allergic oral mucosal reactions
- Immunity and Host Defense against Oral Infections
- Immunopathology of Caries and Periodontitis

Touro University Nevada

Physician Assistant (PA) Studies & Doctor of Osteopathic Medicine (DO) students (PA 659)

Medical Microbiology & Immunology I & II

- Tumor Immunology
- Immunization
- Hypersensitivity
- T cell Receptor Development

Ohio Northern University

P4 students

- Review of Immunology
- Hypersensitivity Reaction Types I, II, III & IV
- MHC & HLA molecules
- Cytokine
- Therapeutic Antibodies
- Autoimmune Diseases
- Immunodeficiency Disorders
- Transplantation Immunology

Service mentorship

- Mentoring 4 P1 students in PHAR 730 Longitudinal Service Elective administering Covid-19 vaccine to the community. January 2021-

Research Mentorship

- Sohini Mandal, junior at Green Valley High School. Summer research project on vaccine hesitancy in US population for MMR vaccine and COVID-19 vaccine hesitancy/ acceptance in Las Vegas Valley High School students, 2019-2021.
- Meghana Veeramachari, Senior at Clark High School. Summer research June-July 2019. Trained for aseptic technique & cell culture, conducting research on recent measles epidemic in US.
- Allen Daviere, P2 student PHAR 719: longitudinal research elective with credit. An analysis of the effects of progressive cellular exposure to various orthodontic appliances June-July 2019.

- Chi Phan, P1 student, PHAR 719: longitudinal research elective with credit, Sept 2018-March 2019. Completed research on 'biological therapy in immune-mediated diseases: a comparative analysis and market trend forecast'.
- Daniel Dalanhese, DMD, orthodontic resident, Sept 2018- Feb 2019. Inflammatory immune response in orthodontic patients fitted with braces/aligners. Incomplete.
- Payal Patel, DMD, orthodontic resident, July 2017-completed. The relationship between salivary estrogen and testosterone with height, weight, and skeletal maturity in orthodontic patients.
 - Research completed, submitted abstracts, 1st prize winner at the 5th Roseman University Research Symposium, March 2019; 1st prize in 'resident presented research' at 6th Roseman Research Symposium, March 2020.
- Manushri Desai, senior student, Clark High School, completed AP research course. Association of vitamin D with skeletal maturation and growth in orthodontic patients.
- Casey Luu, DMD, orthodontic resident, July 2016-May 2018. Association of salivary biomarkers in skeletal maturation of orthodontics patients- a longitudinal study.
 - Completed research, defended and prepared a manuscript.
- Kayla Bateman, DMD, orthodontic resident, July 2015- May 2017. Research dissertation: Correlation of salivary biomarkers IGF-1, estrogen and testosterone to skeletal maturation in orthodontics patients- a cross sectional study'.
 - Best researcher and clinician award winner for the class of 2017.
- Faheem Nasar, DMD, orthodontics resident June 2013-July 2015. Research dissertation; Correlation of Salivary IGF-1 and Estrogen Levels to Skeletal Maturity in Orthodontic Patients.
- Mentored and trained R. Balyan enrolled in Master's program at Virginia Tech with his research on 'isolation and characterization of bovine factor H', 2005-2006.
- Mentored two undergraduate students in research project-oriented credit courses. 'Undergraduate Research Opportunities Program', UM College of Pharmacy, fall 2001-spring 2002.

Faculty Mentorship

- AACP Biological Sciences Mentoring Program, 2020-21: peer mentorship with Dr. Shankar Munusamy, Associate Professor, Drake University College of Pharmacy and Health Sciences.
- AACP Biological Sciences Section Mentoring Program, 2019-20: mentee Dr. Olivia Francis-Boyle, Asst. Professor, Loma Linda University School of Pharmacy, CA.
- AACP Biological Sciences Section Mentoring Program, 2017-19: mentee Dr. Jacklyn Novatt, Asst. Professor, Long Island University School of Pharmacy, NY.
- AACP Biological Sciences Section Mentoring Program, 2016-17: mentee Dr. Kalyan C. Nagulapalli Venkata, Asst. Professor, Larkin University, FL.

COP students

Continuing Professional Development (CPD 495): mentored P1 and P2 students (average 16) for the academic years 2015-16, 2016-17, 2018-19 & 2019-20. Group and individual meeting conducted to develop professional goals and career planning.

Service to the Institution

Committee work

Year 2020-21

- Member, Student Pipeline Strategic Planning committee, University-wide
- Member admissions committee
- Member, faculty development committee

Year 2019-20

- Member, Assessment committee
- Member, Fringe benefits committee
- Coordinator, Levelling Course Committee

2018-19

- Member, Assessment committee
- Coordinator, Levelling Course Committee

2017-18

- Member, faculty Senate
- Chair, University Committee on Faculty rights
- Member, Assessment Committee
- Coordinator, Levelling Course Committee

2016-17

- Member, faculty Senate
- Chair, University Committee on Faculty rights
- Member, Assessment Committee
- Coordinator, Levelling Course Committee

2015-16

- Member, faculty Senate
- Chair, University Committee on Faculty rights
- Member, Assessment Committee
- Coordinator, Levelling Course Committee

2014-15

- Chair, University Committee on Faculty Rights
- Vice Chair, Curriculum committee
- Member, Faculty senate
- Member, ACPE subcommittee for Organization and Administration
- Member, PPRC subcommittee
- Coordinator, Levelling Course committee
- Member, COM LCME Faculty subcommittee
- Member, COM LCME Faculty Issues subcommittee
- Member, COM Infection and Host Defense curriculum committee

2013-14

- Curriculum Committee
- Assessment Committee

2012-13

- Curriculum Committee
- Assessment Committee

2011-12

- Curriculum Committee
- Assessment Committee
- Grants Steering Committee, University-wide

2010-11

- Faculty Senate, University-wide: Vice-president
- Fringe benefits committee, University-wide: member
- Curriculum committee: member
- Assessment committee: member

2009-10

- Faculty Senate, University-wide: Vice-president
- Fringe benefits committee: member
- Faculty development committee: member
- Assessment committee: member
- Recruitment committee: member

2008-09

- By-Laws committee: member
- Curriculum committee: member
- Fringe Benefits committee, University-wide: member

2007-08

- Assessment committee: secretary
- Educational Resources Committee: *ad-hoc* chair
- Curriculum Committee
- Planning, Priority and Resources Committee

2006-07

- Assessment committee: secretary
- Admission committee: member
- Educational Resources Committee: member
- Faculty recruitment committee: *ad-hoc* (Pharmaceutics, SJ)

Student interviews

- Conducted admission interviews conducted on average 5 days/ cycle: 2020-21, 2019-20, 2018-19, 2017-18, 2016-17, 2015-16, 2014-15, 2013-14, 2012-13, 2011-12, 2010-11, 2009-10, 2008-09, 2007-08 & 2006-07.
- Conducted exit interviews for graduating seniors 2-3 days in the years: 2014-13, 2012-13, 2011-12, 2010-11, 2009-10, 2008-09, 2007-08 & 2006-07.

Service to the Profession

Served American Association of Colleges of Pharmacy (AACP), American Association of Pharmaceutical Scientists (AAPS), National Association of Board of Pharmacists (NABP), and Accreditation Council of Pharmacy Education (ACPE) in various capacities serving on the committees, reviewing grants, abstracts, posters, writing questions and conducting accreditation site visits.

- Invited to judge at Nevada HOSA-Future Health Professionals State Leadership Conference, March 15-18, 2020, Reno, NV.
- AACP Annual meeting student poster judge: July 14, 2019; July 23 2018; July 15, 2017.

- AACP Biological Sciences Section Mentorship Committee member: 2020-21, 2019-20.
- AACP Council of Section Mentorship Committee: 2020-21
- AAPS Awards Committee member: 2019-2021. Reviewed and recommended awards for AAPS Student Chapter, Global Health Award, Distinguished Service Award, and Emerging Leader.
- AAPS 2017 Annual Meeting Poster Forum 2 Host: Biopharmaceutics- Oral (Small Molecule), Nov 13, 2017, San Diego.
- ACPE comprehensive site visit for evaluation of Doctor of Pharmacy program at the Keck Graduate Institute (KGI) School of Pharmacy, April 10-12, 2018.
- ACPE comprehensive site visit for evaluation of Doctor of Pharmacy program at the Xavier University COP, Oct 28-30, 2014.
- Foreign Pharmacy Graduate Equivalency Examination (FPGEE)/ the Pharmacy Curriculum Outcomes Assessment (PCOA), item writer, National Association of Boards of Pharmacy (NABP), IL 60056: Feb 16-21, 2021 (virtual); Oct 16-18, 2019; Oct 17-19, 2018; Nov 18-20, 2017; June 17-19, 2015; Oct 24-25, 2013; Oct 12-13, 2012.
- Member, AACP Education Quality workgroup: 2012-2013.
- American Association of Colleges of Pharmacy, Council of Faculties (AACP COF) Faculty Affairs Committee member: 2011-12, 2010-11, 2008-09.
- American Association of Colleges of Pharmacy Biological Sciences Section sub-committee chair 2011-12.
- Invited to serve as a judge for Nevada Health Occupations Students of America (HOSA) State Leadership Conference in Pharmacy Science, Las Vegas, NV, March 19, 2019.
- Volunteered at the American Association of Pharmaceutical Scientists annual meeting in 2007 & 2008 for the subsection 'awareness and membership drive'.

Service to the community

- Volunteered at the **Covid-19 vaccination** point of distribution (POD) SNHD/ Roseman University on 1/16, 1/23/, 2/13/ 2/20, 2/27, 4/17/21. Served as the lead for post-vaccination adverse reaction monitoring, and Moderna vaccine prepper.
- Volunteered at the Asian Community Development Council (ACDC), Las Vegas Covid-19 vaccine clinic, April 18, 2021.

Review (recent)

- External reviewer for promotion application of Dr. Jennifer Hernandez, Assistant Professor at KGI School of Pharmacy and Health Sciences, April 2021.
- Editor and Reviewer, Microbial Toxins in Handbook of Toxinology, Springer 2015-2017.
- External reviewer for promotion and tenure application of Dr. Christopher L. Farrell, Assistant Professor, Presbyterian College, School of Pharmacy, September 2015.
- Internal reviewer for application of promotion of Dr. Arup Chakraborty, Assistant Professor, Roseman University College of Pharmacy, 2014.
- AACP annual meeting abstract reviewer: 2014, 2013 & 2012.
- AACP SoTL Grant reviewer: 2019-20 cycle.
- AACP New Investigator Award Grant reviewer: 2020, 2019, 2018, 2017, 2015, 2013 & 2012.
- AAPS annual meeting abstract reviewer: 2021, 2020, 2019, 2018, 2017, 2015, 2014 & 2013.

- American Journal of Pharmacy Education (AJPE) Student Leadership theme issues 1 and 5 manuscript reviewer, 2012.
- Manuscript reviewer for Inflammopharmacology, 2012, 2011.
- Manuscript reviewer for Phytotherapy Research, 2020-21.
- Member of the editorial board for AIMS Microbiology 2021-2023.
- External reviewer for promotion and tenure application of Dr. Jennifer Hernandez, Assistant Professor, KGI School of Pharmacy and Health Sciences, April 2021.

Relevant Skills

- Experience with educational technology platforms: Canvas, Blackboard, ExamSoft, CoreELMS, Water mark & Turnitin.
- Taught online courses, and administered assessments, seminars via Zoom extensively.
- Review, analysis and interpretation of scientific report, data and grant proposals.
- Preparation of grant proposal and submission to funding agencies including NIH.
- Development and management of successful external collaboration.
- Development and management of courses.
- Writing assessment questions & gradation of students.
- Certified Accreditation Council for Pharmacy Education (ACPE) program evaluator.
- Trained and participated in institutional/ program evaluation and accreditation.
- Initiation and management of research projects.
- Scientific writing, presentation and communication.
- Chairing scientific session
- Reviewer of scientific articles and abstracts

Workshop/ Training (recent)

- Item writing workshop for the National Association of Boards of Pharmacy: 2021, 2019, 2018, 2017, 2015, 2013 & 2012, Mount Prospect, Northbrook, IL 60056.
- ACPE Evaluator Training workshop, October-19-20, 2009, Chicago.
- Attended American Colleges of Pharmaceutical Education (ACPE) Evaluator Training workshop, October 19-20, 2009, Chicago.
- Retrained for new 2016 ACPE standards on Oct 10, 2016.
- Received ACPE's International Services Program webinar training, Aug 16, 2016, April 18, 2019, & May 13, 2020.
- BSL-3 training course, University of Maryland School of Medicine (MARCE), Feb 14-16, 2005.
- NIAID Tularemia workshop, NIAID Rocky Mountain Laboratories, Oct 3-4, 2004.

Grant & Scholarship

- Fulbright-Nehru Specialist Program 2020 application submitted to United States-India Educational Foundation. Project: Infection, Immunity and Immune-based Therapeutics. Host institution: Birla Institute of Technology & Science, Pilani (BITS), Goa.
- NIH R34 Biomarker Clinical Validation Planning Grant: \$150,000 for 1 year. Correlation of salivary biomarker with skeletal maturation in orthodontics patients. In preparation.
- AACP NPF-RAP, 2010-11. Project: Statin-induced Immune Modulation'. Not funded.
- California Table Grape Commission external grant application 11/20/2009.

Project: 'Effect of Freeze-dried Grape Powder on Immune Activation using a Cell-based Assay'. Not funded.

- AACP NIP grants application 2008-09.
- Project: 'Study of Immune Response Modifiers using Cell-based Assay'. Not funded.
- USN intramural grant 2007-08
- Project: 'Development of a cell-based assay system for immune response study', funded \$10,000.
- Upjohn and Vahlteich Award, 2003-2004, UM, College of Pharmacy
- Project: 'Liposome-adjuvant-based vaccine delivery system', funded \$ 40,000.
- Senior Research Fellowship, 1991-1993, Indian Council of Medical Research, India
- Project: 'Russell's viper venom vaccine development'.

Professional Membership

American Association of Pharmaceutical Scientists

American Association of Colleges of Pharmacy

American Society of Microbiologists

American Association of Advancement of Science

Bibliography

1. Non-peer reviewed article 'Vaccines Teach Our Immune System to be Ready'. **Mandal, M.** Published in Vegas Inc. Health Care Quarterly, Page 17, Vol 30, 2020.
2. Non-peer reviewed article 'Covid-19 Vaccine- A Powerful Tool in our Public Health Arsenal'. **Mandal, M.** Roseman Medical Group Magazine, Nov 2020 issue.
3. Luu, C., Bateman, K., Bollu, P and **Mandal M.** Relationship between salivary sex steroids and skeletal maturity in orthodontic patients". *Manuscript communicated to AJODO.*
4. Bateman, K., Luu, C., Bollu, P. and **Mandal M.** Correlation of salivary insulin-like growth factor-1, testosterone, estrogen and cervical vertebral maturation staging in orthodontic patients. *Manuscript in preparation.*
5. Patel, P., Bateman, K., Luu, C., Bollu, P. and **Mandal, M.** Salivary sex steroids, height, weight and skeletal maturity in orthodontic patients. *Manuscript in preparation.*
4. **Mandal, M.** Bacterial Pore-Forming Toxin in Macromolecule Delivery: Lessons Learned from Listeriolysin O. Handbook of Toxinology: Microbial Toxins, Springer, Ch. 17, Pg 317-328, 2017.
5. Unni, E.J., **Mandal, M.**, Rajan, R., Johanson, E., and Jorvig, E. Knowledge Retention of Basic Pharmaceutical Sciences in a PharmD program. Currents in Pharmacy Teaching and Learning. 8: 827-832, 2016.
6. Li, J*, Ryder C*, **Mandal, M***, Ahmed, F., Azadi, P., Snyder, D. S., Pechous, R. R., Zahrt, T., and Thomas J. Inzana. 2007. Attenuation and protective efficacy of an O-antigen-deficient mutant of *Francisella tularensis* LVS. Microbiology, 153: 3143-3155 [*equal contribution].
7. Stier, E., **Mandal, M.** and Lee, K. -D. 2004. Differential cytosolic delivery and presentation of antigen by listeriolysin O-liposomes to macrophages and dendritic cells. Molecular Pharmaceutics. 2: 74-82.
8. **Mandal, M.**, Kawamura, K., Wherry, E.J., Ahmed, R. and Lee K. -D. 2004. Cytosolic delivery of viral nucleoprotein by listeriolysin O-liposome induces enhanced specific cytotoxic T lymphocyte response and protective immunity. Molecular Pharmaceutics. 1: 2-8.

9. **Mandal, M.**, Mathew E., Provoda C., and Lee, K. -D. 2003. Delivery of macromolecules into cytosol using liposomes containing hemolysin. *Methods in Enzymology* 372 (Ch. 18): 319-339.
10. **Mandal, M.** and Lee, K. -D. 2002. Listeriolysin O-liposome-mediated cytosolic delivery of macromolecule antigen in vivo: Enhancement of antigen-specific cytotoxic T lymphocyte frequency, activity, and tumor protection. *Biochim. Biophys. Acta.* 1563: 7-17.
11. Chiu, N. M., Chun, T., Fay, M., **Mandal, M.** and Wang, C.-R. 1999. The majority of H2-M3 is retained intracellularly in a peptide-receptive state and traffic to the cell surface in the presence of N-formylated peptides. *J. Exp. Med.* 190: 423-434.
12. **Mandal, M.**, Chen, X.-R., Alegre, M-L., Chiu, N. M., Chen, Y.-H., Castano, A.R. and Wang, C.-R. 1998. Tissue distribution, regulation and intracellular localization of murine CD1 molecules. *Mol. Immunol.* 35: 525-536.
13. Chen, Y. -H., Chiu, N. M., **Mandal, M.**, Wang, N. and Wang, C.-R. 1997. Impaired NK+ T cell development and early IL-4 production in CD1 deficient mice. *Immunity* 6: 459-467.
14. **Mandal, M.** and Beaman K. D. 1995. Purification and characterization of a pregnancy associated protein: TJ6s. *Am. J. Reprod. Immunol.* 33: 60-67.
15. **Mandal, M.**, Hati, R.N., Hati, A. K. 1993. Neutralization of pathophysiological manifestations Russell's viper envenoming by antivenom raised against gamma irradiated toxoid. *Toxicon* 31: 213-215.
16. **Mandal, M.** Hati, R. N. and Hati, A. K. 1992. Neutralization potency of Russell's viper venom toxoid antivenom. *Indian J. Med. Res. (B)* 96: 219-222.
17. Hati, A. K., **Mandal, M.**, De, M. K., Mukherjee, H. and Hati, R. N. 1992. Epidemiology of snake bite in the district of Burdwan, West Bengal. *J. Indian Med. Assoc.* 90: 145-147.
18. **Mandal, M.**, Hati, R. N. and Hati, A. K. 1991. Effect of gamma irradiation on Cobra (*Naja naja*) venom as a toxoid. *Snake* 23: 14-18.
19. Hati, R. N., **Mandal, M.** and Hati, A. K. 1990. Active immunization of rabbit with gamma irradiated Russell's viper venom toxoid. *Toxicon* 28: 895-902.
20. Hati, A. K., Hati, R. N., **Mandal, M.**, Panda, D. and Das, S. 1989. The effect of gamma irradiated detoxified viper venom as a toxoid against viper venom. *Snake* 21: 36-40.

Abstracts

1. **Mandal, M.** Mandal, S., Vale, J. and Vinciguerra, A. COVID-19 Vaccine Hesitancy or Acceptance in High School Students. Accepted for the 2021 AACP Annual Meeting, Virtual Pharmacy Education 2021.
2. **Mandal, M.** 'Pandemic Preparedness: Development of an Elective Course on Infection and Immunity'. Accepted for the 2021 AACP Annual Meeting, Virtual Pharmacy Education 2021.
3. COVID-19 Vaccine: Technology Platform, Efficacy and Immune Protection. **Mandal, M.**, Roseman Research Day Symposium April 14, 2021.
4. Covid-19 Vaccine: Hesitancy or Acceptance in High School Students. Mandal, S., Vale, J., Vinciguerra, A and **Mandal, M.** Roseman Research Day Symposium April 14, 2021.
5. Emerging Role of Pharmacists in Treatment and Vaccination for Covid-19. Dwaynie Bacon, D., Ha, M. and **Mandal, M.** Roseman Research Day Symposium April 14, 2021.
6. Effect of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) immunodominant peptide antigens on human oral mucosal, nasal and corneal epithelial cells. **Mandal, M.**, and Dey, S. AAPS PharmSci 360 Annual Meeting, Oct-Nov, 2020 (virtual).

7. 'Best Practices for Developing Effective AACP Mentoring Programs and Relationships for Pharmacy Faculty'. Kinney, S., Eiland, LS., Calinski, DM., **Mandal, M.**, Novatt, J., Borgelt LM., Dell KA and Smith SE. AACP Annual Meeting, July 2020 (virtual).
8. 'Bugs and Biodrugs: Incorporating Emerging Biological Sciences Topics into the Pharmacy Curriculum'. Calinski, DM., Weldon, A., Johnson JL., and **Manas Mandal**. AACP Annual Meeting July 2020 (virtual).
9. Veeramacheneni M, Mandal, S and **Mandal M**. Once conquered, back with vengeance: recent measles epidemic in USA. Roseman Research Day Symposium, March 11, 2020.
10. Patel, P., Bateman, K., Luu, C., Bollu, P and **Mandal, M**. The Relationship between salivary estrogen and testosterone with height, weight, and skeletal maturation in orthodontic patients. Pacific Coast Society of Orthodontists (PCSO)/RMSO Annual Session, Honolulu, HI, Oct 3-5, 2019. Presented at the competitive award session.
11. **Mandal, M**. Salivary biomarkers, skeletal maturation and treatment decision in orthodontic patients. AAPS annual meeting PharmSci 360 conference, Nov 3-6, 2019, San Antonio, TX. Rapid Fire Session Oral Presentation.
12. Phan, Chi and **Mandal, M**. Biological therapy in immune-mediated diseases: a comparative analysis and market trend forecast. AACP Annual Meeting, Pharmacy Education July 15 2019, Chicago, Illinois. AJPE 2019; 83 (5) article 7654, pg 919-20.
13. Phan, Chi and **Mandal, M**. Biological therapy in immune-mediated inflammatory diseases (IMIDs): comparative analysis and forecast of the market trend. Roseman University Research Day, March 2019.
14. Patel, P., Bateman, K., Luu, C., Bollu, P and **Mandal, M**. The relationship between salivary estrogen, testosterone with height, weight and skeletal maturation in orthodontic patients. First prize winner at the Roseman University Research Day Symposium, March 2018.
10. **Mandal, M** and Lee, K-D. Pore-forming Bacterial Toxin in Cancer Immunotherapy: Activation of Tumor Antigen-Specific Cytotoxic T Lymphocyte. Nevada Chapter CEOs Against Cancer (American Cancer Society) and Roseman University Research Symposium. Oct 4, 2018.
11. **Mandal, M**. Jorvig, E., Kale, V., Talbot, J., Jayakumar, R., and Park, H-C. 'Student Faculty Partnership in Developing a Leveling Course'. 2018 AACP Annual Meeting 'Pharmacy Education', July 23, 2018, Boston, MA.
12. Bloom, T., Pavuluri, N., Lebovitz, **Mandal, M.**, and Shuford, V. 'The Grass Might Be Greener for Students and Faculty at College/School of Pharmacy with Branch Campuses'. 2018 AACP Annual Meeting 'Pharmacy Education', July 23, 2018, Boston, MA.
13. Bateman, K., Luu, C., Bollu, P and **Mandal, M**. Association of Salivary Biomarkers with Skeletal Maturation in Orthodontic Patients. American Association of Pharmaceutical Scientists' (AAPS) Annual Meeting and Exposition, abstract# M488053, November 4-7, 2018, Washington DC.
14. Bateman, K., Luu, C., Bollu, P. and **Mandal, M**. Salivary Biomarker in Assessment of Skeletal Maturation of Orthodontic Patients. American Association of Pharmaceutical Scientists' (AAPS) Annual Meeting and Exposition, abstract# M4017, November 12-15, 2017, San Diego.
15. **Mandal, M.**, Radhakrishnan, R and Vadlapatla, R Faculty Perspectives on Research and Scholarship at Private Non-profit Versus Private For-profit Pharmacy Teaching Institutions'. AACP Annual Meeting, Pharmacy Education July 17, 2017, Nashville, Tennessee.
16. Bateman, K., Luu, C., Bollu, P and **Mandal, M**. Correlation of Salivary Insulin-like Growth Factor 1, Testosterone, Estrogen with Height and CVM Staging in Orthodontic Patients. Roseman University Research Day Abstract. 3rd prize winner. March, 2017.

17. Bateman, K., Bollu, P and **Mandal, M.** Roseman University Research Symposium Correlation of salivary insulin-like growth factor 1, testosterone and estrogen with cervical vertebral maturation stage (CVMS) and height in orthodontic patients. March 2, 2016.
18. **Mandal, M.**, Radhakrishnan, R and Vadlapatla, R. Faculty Perspective on Scholarship and Institutional Expectations in Smaller, Teaching-Intensive Pharmacy Institutions in the United States. AACP Annual Meeting, July 22-26, 2016, Anaheim, CA.
19. Nasar, F; Bateman, K; Bollu P; and **Mandal, M.** Pilot Study Correlating Salivary IGF-I and Estrogen Levels to Skeletal Maturity in Orthodontic Patients. Pacific Coast Society of Orthodontists (PCSO) 79th Annual Session, E-Poster, Oct 22-15, 2015, Palm Springs, CA.
20. **Mandal, M and** Yellepeddi, VK. Student Knowledge Retention of Biomedical Sciences (Immunology). AACP annual meeting, Pharmacy Education 2015, July 13, National Harbor, MD.
21. **M. Mandal**, Unni, E., Kuykendall, W., Jorvig, E. Impact of basic immunology information on clinical immunology course. AACP annual meeting, July 27, Grapevine, TX. AJPE, 2014, 78 (5) article 111.
22. **M. Mandal, M.** The Importance of Immunology Teaching in an Accelerated PharmD Program, abstract# AM-13-2839. American Association of Pharmaceutical Scientists (AAPS) annual meeting Nov 10-14, 2013, San Antonio, Texas.
23. **Mandal, M.**, Renee Coffman, Harry Rosenberg. Immunology education in an accelerated Pharm D program. American Association of Immunologist annual meeting, immunology 2013™ May 3-7, 2013 in Honolulu, Hawai'i.
24. **M. Mandal.** Immunomodulatory properties of statin. AAPS annual meeting, Oct 14-18, 2012, Chicago, IL.
25. **Mandal, M.**, Lee, K-D. *Listeria monocytogenes* Hemolysin Listeriolysin O-mediated Delivery of Vaccine Antigen Primes Enhanced and Protective Cytotoxic T Lymphocyte Response. 1st National Conference on Animal, Microbial, Plant Toxins and Snakebite Management” jointly organized by Indian Institute of Chemical Biology & KPC Medical College & Hospital, Kolkata, India, 11-12 December 2010.
26. **Mandal, M.** and Lee, K-D. Preexisting Listeriolysin O (LLO)-specific Immunity does not Impair Generation of LLO-liposome Encapsulated Vaccine Antigen-specific Immune Response. Abstract # T2048, AAPS Annual Meeting, Nov 16-20, 2008, Atlanta, GA.
27. **M. Mandal**, Berg, G. and Inzana, T. J. 2006. Lipopolysaccharide O-antigen Deficient *Francisella tularensis* Primes Cell-mediated Immune Response and Confers Protection to Francisella Infection. 18th Annual Research Symposium, “Translational Research”, abstract# 74 May 23-24, 2006. The Virginia-Maryland Regional College of Veterinary Medicine, Virginia Polytechnic and State University, VA.
28. **Mandal, M.**, Berg, G. and Inzana, T. J. 2005. Cell Surface Antigen of *Francisella tularensis* in Infection and Immune Response. 17th Annual Research Symposium, abstract# 25, May 16-17 2005. The Virginia-Maryland Regional College of Veterinary Medicine, Virginia Polytechnic and State University, VA.
29. **Mandal, M.**, Berg, G. and Inzana, T. J. 2005. Role of Cell Surface Antigen of *Francisella tularensis* in Infectivity and Replication within Macrophage. American Society for Microbiology, 105th General Meeting, abstract# E-024, June 5-9, Atlanta, GA.
30. **Mandal, M.** and K.-D. Lee. 2002. In vivo cytosolic delivery of a viral vaccine antigen for priming antigen-specific cytotoxic T lymphocyte response. American Association of Pharmaceutical Scientists' (AAPS) annual meeting, abstract# AM02-01251, Toronto, Canada.

31. **Mandal, M.** and Lee, K.-D. 2001. In vivo cytosolic delivery of exogenous antigen mediated by listeriolysin O: enhanced cytotoxic T-lymphocyte induction and tumor protection. The 28th International Symposium on Controlled Release of Bioreactive Materials, San Diego, CA.
32. **Mandal, M.** and Lee, K.-D. 2000. Listeriolysin O-containing liposome-mediated cytosolic delivery of exogenous antigen. Selected for oral presentation at the American Association of Immunologists (AAI) annual meeting, Immunology 2000, Seattle, WA.
33. Lee, K.-D., **Mandal, M.**, Dutta, S. and Reinhardt, C.A. 1999. A novel vaccine carrier targeting the cytosol of dendritic cells. Keystone Symposia on Molecular & Cellular Biology. HIV vaccine development: opportunities and challenges. Keystone, Co.
34. **Mandal, M.** and Lee, K.-D. Listeriolysin O-containing liposomes as protein antigen vaccine carriers. AAPS, 1999, New American Association of Colleges of Pharmacy, Council of Faculties (AACP COF) Faculty Affairs Committee member: 2010-11 Orleans, LA.
35. **Mandal, M.**, Dutta, S. and Lee, K.-D. 1998. Listeriolysin O-containing liposomes as T cell vaccine carriers. AAPS, abstract# 2541, San Francisco, CA.
36. Mathew, E., Larson, G., **Mandal, M.**, Reinhardt, C., Leamon, C., Hardee, G. and Lee, K.-D. 1998. Cytosolic delivery of antisense oligonucleotide using liposomes containing endosomolytic listeriolysin O. AAPS, abstract# 2489, San Francisco, CA.
37. Mathew, E., Larson, G., **Mandal, M.**, Reinhardt, C., Leamon, C., Hardee, G. and Lee, K.-D. 1998. Listeriolysin O-containing liposomes as an efficient cytosolic delivery vehicle for antisense oligonucleotides. Antisense 98, pg 42-43, London.
38. Wang, C.-R., **Mandal, M.** and Chiu N. 1996. Characterization of murine CD1. ASBMB/ASIP/ AAI joint meeting 1996, New Orleans, LA.
39. **Mandal, M.**, Nichols, T. C. and Beaman K. D. 1995. Putative suppressor isoform of TJ6: the pregnancy associated cytokine. 14th annual meeting of the American Society of Reproductive Immunology, Philadelphia, PA.
40. **Mandal, M.** and Beaman, K. D. 1993. A 20 kDa isoform of TJ6 from murine fetoplacental unit. 22nd Autumn Immunology Conference, Chicago, IL.
41. **Mandal, M.**, Hati, R. N. and Hati, A. K. 1992. Gamma irradiated viper venom as a toxoid. 4th National Bio-Organic Symposium, 4th National Bioorganic Symposium, BARC, Bombay, India.
42. **Mandal, M.**, Hati, A. K. and Hati, R. N. 1990. Some biochemical and immunological aspects on the effects of irradiation on Russell's viper (*Vipera russelli*) venom. 2nd Asia-Pacific Congress on Animal, Plant and Microbial Toxins, Banaras Hindu University (BHU), India.
43. Hati, A.K., **Mandal, M.** and Hati, R.N. Active immunization of mice and rabbits by gamma irradiated Russell's viper (*Vipera russelli*) venom. 2nd Asia-Pacific Congress on Animal, Plant and Microbial Toxins, 1990; BHU, India.

Seminars

1. Webinar 'What Mentorship Can do to Advance Your Career?' on behalf of AACP Biological Sciences Section Mentorship Committee, June 3rd, 2021. **Mandal, M.**, Westrich, L., Kumar, P., and Rajagopalan, V. Moderator: Kinney, S.
<https://attendee.gotowebinar.com/recording/6615180238097527054>
2. Invited webinar (1st speaker) for 'one day national virtual conference on green approaches in medicinal chemistry for sustainable drug design and synthesis' organized by the JSS College of Pharmacy, Dept. of Pharmaceutical Chemistry.

- Title of the talk: 'Not so green, but effective vaccines for COVID-19'. **Mandal, M.**, April 9, 2021.
3. Invited webinar to the Dept. of Pharmaceutical Sciences, Butler University College of Pharmacy and Health Sciences. 'Looking Ahead to Tomorrow: Post Pandemic', **Mandal, M.**, April 1st, 2021.
 4. Roseman University Neighborhood Health Series webinar 'Looking Ahead to Tomorrow: COVID-19 in 2021'. **Mandal, M.**, January 21, 2021. https://youtu.be/o_AuGbh2r_g
 5. Invited webinar as a 'resource person' to Prof. S. C. Lahiri Memorial Foundation organized by IQAC, Moulana Azad College, Calcutta University, India on Emerging Health Management with special reference to Covid-19, and Snake-bite in India. Title: Covid-19, Where Are We Now? **Mandal, M.**, Nov 21, 2021.
 6. Invited webinar for the 1st Roseman University Resource Series 'Lifelong Learning for Alumni'. Title: Covid-19 Pathophysiology, Diagnosis, Treatment and Vaccine. **Mandal, M.**, August 13, 2020. <https://www.youtube.com/watch?v=jTaZNIcggMk>
 7. Invited webinar to JSS, AHER College of Pharmacy, Ooty, India. Title: Immune Response to Virus Infection, **Mandal, M.**, July 1, 2020.
 8. 'Best Practices for Developing Effective AACP Mentoring Programs and Relationships for Pharmacy Faculty'. Kinney, S., Eiland, LS., Calinski, DM., **Mandal, M.**, Novatt, J., Borgelt LM., Dell KA and Smith SE. Virtual presentation with CE credit, Women Faculty & Biological Sciences Section Mentoring Group, AACP Annual Meeting, July 15, 2020.
 9. 'Bugs and Biodrugs: Incorporating Emerging Biological Sciences Topics into the Pharmacy Curriculum'. Calinski, DM., Weldon, A., Johnson JL., and **Mandal, M.** Virtual presentation, Biological Sciences Section, AACP Annual Meeting July 16, 2020.
 10. Immune Boosting Supplements: Facts and Myths. Seniors United, Clark County Library, Las Vegas, NV Jan 8, 2020.
 11. Playing offence and defense: boosting our immune system. Roseman University Neighborhood Health Series. Dec 11, 2019, Henderson, NV.
 12. An inside peek into research positions within the pharmaceutical and biotech industries. Health Careers Leadership Experience, HOSA, Dec 9, 2019 Las Vegas, NV.
 13. Salivary biomarkers, skeletal maturation and treatment decision in orthodontic patients. AAPS annual meeting PharmSci 360 Conference, Rapid Fire Session, Nov 4, 2019, San Antonio, TX.
 14. Invited seminar. Quest for a T cell vaccine. JSS, AHER, College of Pharmacy, Mysuru, India, January 21 & 23, 2019.
 15. Invited seminar. Trends in immunology. JSS, AHER, College of Pharmacy, Mysuru, India, January 22 & 24, 2019.
 16. Neighborhood health series presentation: 'Power of the plant: immune-boosting supplements', September 20, 2018.
 16. Neighborhood health series presentation: 'March madness: allergic diseases on the offence', March 15, 2017, 2018.
 17. Quest for T cell vaccines. Roseman University College of Medicine Biomedical Sciences Seminar. Nov 16, 2016.
 18. Pore-forming Bacterial Toxins in Health and Disease. Invited seminar at the 3rd Annual Conference of the Toxinological Society of India and 1st International Conference on 'Biology of Natural Toxins'. Birla Institute of Science and Technology, Goa, Dec 19-21, 2013.
 19. Bacterial toxin in vaccine development. *Invited seminar* at the Birla Institute of Technology and Science, Goa campus, India, Dec 16, 2011.

20. *Listeria monocytogenes* Hemolysin Listeriolysin O-mediated Delivery of Vaccine Antigen Primes Enhanced and Protective Cytotoxic T Lymphocyte Response. *Invited lecture*, at the 1st National Conference on Animal, Microbial, Plant Toxins and Snakebite Management, Kolkata, India, 11-12 December 2010.
21. Induction of Cytotoxic T lymphocyte-mediated protective immunity by adopting listerial endosome escape mechanism. Department of Microbiology & Immunology, University of South Carolina, Columbia, SC, March 2006.
22. How Immue System Works: An Overview. University of Southern Nevada College of Pharmacy, NV, May 2006
23. Induction of cytotoxic T lymphocyte-mediated protective immune response by adopting listerial endosome escape mechanism. MedImmune, Gaithersburg, MD, November 2005.
24. The role of cell surface antigen of *Francisella tularensis* in infection and immune responses. Idexx Laboratories, ME, June 2005.
25. Priming of cytotoxic T lymphocyte-mediated protective immune response by adopting cytosol escape strategy of *Listeria monocytogenes*. Dept of Biomedical Science & Pathobiology, College of Veterinary Medicine, Virginia Tech, VA, March 2004.
26. Induction of cytotoxic T lymphocyte-mediated protective immunity by adopting listerial endosome escape mechanism. Vical, San Diego, CA, February, 2004.
27. Cytotoxic T lymphocyte-mediated protective immunity induced by cytosolic delivery of vaccine antigen. Department of Microbiology and Immunology, University of Illinois Chicago, IL, January 2004.
28. Aniviral protective immunity induced by cytosolic delivery of viral antigen. College of Pharmacy, University of Michigan, MI, 2004.
29. Listeriolysin O-mediated cytosolic delivery of vaccine antigen inducing protective CTL response. Antex Biologics, Gaithersburg, MD, July 2003.
30. Listeriolysin O liposome-mediated cytosolic delivery of vaccine antigen generates protective CTL response to tumor antigen. Department of Pharmaceutical Sciences, College of Pharmacy, UM, MI, 2001.
31. Listeriolysin O-containing liposome-mediated cytosolic delivery of exogenous antigen. American Association of Immunologists Annual Meeting, Immunology 2000, Seattle, WA.

Scientific Session Chair

Co-chaired a scientific session on 'Animal and Microbial Toxin' at the 1st National Conference on Animal, Microbial, Plant Toxins and Snakebite Management jointly organized by IICB & KPC Medical College & Hospital, Kolkata, India, 11-12 December 2010.

Roundtable Session

1. **Mandal, M.** 'Equity Gap in Pharmacy Education' accepted for presentation at the AACP Virtual Pharmacy Education 2021. Roundtable Session I on Tuesday, July 20.
2. **Mandal, M.** 'Biologicals in the Treatment of Inflammatory Diseases'. AACP annual meeting 2014, July 27 Grapevine, TX.

Media Exposure

1. Las Vegas Weekly News article on Covid-19 vaccine: The Vaccine Rollout
<https://lasvegasweekly.com/news/2021/jan/07/five-reasons-las-vegans-feel-optimistic-2021/>



Las Vegas Weekly
Article on Covid-19 \

2. Healthy Monday with Marife Aczon-Armstrong on PHLV radio on Covid-19 vaccine facts for Pilipino community, Dec 22, 2020.
<https://www.facebook.com/phlvradio/videos/389180625697791/?vh=e&extid=0&d=n>
3. Interviewed by News 3 KSNV TV channel on Covid-19, vaccines, release, side effects- allergic reaction etc. Dec 7, 8 & 9, 2020. Interview was broadcasted for next several days, and picked up by other local channel in San Antonio, TX.
<https://news3lv.com/news/local/questions-answered-the-who-what-when-and-where-about-the-vaccine>
<https://news3lv.com/news/local/with-covid-19-vaccines-on-the-horizon-opinions-are-mixed>
4. Interviewed by Channel 13 KTNV TV on Coronavirus vaccine by Pfizer on Dec 9, 2020.
<https://www.ktnv.com/news/coronavirus/pfizers-covid-19-vaccine-inches-closer-to-approval-las-vegas-prepares>
5. Local community PHLV radio interview 'Healthy Mondays with AAPINA of NV' with Dr. Marife Aczon-Armstrong.
Topic: Covid-19, facts and myths, April 6 & August 17, 2020.
<https://www.facebook.com/phlvradio/videos/802267413912973/?vh=e&d=n>
Topic: Covid-19 vaccines, Dec 17, 2020.
6. PHLV radio interview 'Healthy Mondays with AAPINA of NV' with Dr. Marife Aczon-Armstrong
Topic: Healthy Lifestyle and Immune-boosting Supplements, Nov 11, 2019.
<https://www.facebook.com/phlvradio/videos/3093510360681475/>
7. <https://news3lv.com/news/local/new-vaccines-on-the-horizon-doctors-say-i>
Covid-19 vaccine protection against new variants Feb 3, 2021. Interviewed by Lauren Clark for Channel 3 News.
8. Interview with Kyndell Kim anchor reporter, KSNV, News 3 IKVCW on Covid-19 vaccine protection timeline, 03/17/21.
9. Interview with Kyndell Kim anchor reporter, KSNV, News 3 IKVCW on Moderna Covid-19 vaccine clinical trial in children 6 months-12 yr of age, 03/22/21.
10. PHLV radio interview 'Healthy Mondays with AAPINA of NV' with Dr. Marife Aczon-Armstrong.
Topic: Covid-19 vaccine hesitancy in Asian minority community in Las Vegas Valley' April 13, 2021.
<https://www.facebook.com/1334950993206183/videos/287349396345393>

References

Available upon request.