

## CURRICULUM VITAE

NAME: **Shousun Chen Szu, Ph.D.**

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CITIZENSHIP: U. S. A.

EDUCATION:

- 1966 B. Sc. Cheng-Kung University, Taiwan, China.
- 1967 M. Sc. Michigan Technological University, Houghton, Michigan.
- 1974 Ph. D. University of California at Davis, Davis, California.

PROFESSIONAL HISTORY:

- 1972 - 1974 -National Science Foundation Research Associate, Chemistry Department,  
University of North Carolina, Chapel Hill, NC.
- 1974 - 1978 -Visiting Fellow, National Cancer Institute, NIH, USA.
- 1978 – 1980 -Research Chemist, Center for Biologics Evaluation and Research, FDA, USA
- 1980 - 1983 -Senior Staff Fellow, Natl Inst of Diabetes, Digestive and Kidney Diseases, NIH, USA
- 1983 - 1988 -Senior Staff Fellow, Natl Inst of Child Health & Human Development (NICHD),  
NIH, USA
- 1988 - 2013 - Senior Staff Scientist /Research Chemist, NICHD, NIH, USA
- 2013-2015 - Senior Staff Scientist/Research Chemist,  
Fogarty International Center and NICHD, NIH , USA
- Project leader of vaccine development for enteric pathogens *Salmonellae*, *V. Cholerae*, *Escherichia coli*, Rotavirus and *Jejuni campylobactor*
- 2015-present Senior Advisory Board Member and Vice President, Zwings Consultant LLC.  
Senior Scientific Advisor, Biologics Quality & Regulatory Consultants, LLC

## COMMITTEES, BOARDS members:

- Committee, WHO Diarrhoeal and Enteric Vaccines Advisory Committee (2007, 08, 2012-14)
- Committee, WHO Steering committee for Diarrhea Diseases (2002- 06, 2019)
- Resident Scholar, International Vaccine Institute, (2012)
- Committee, WHO Guidelines for Diagnosis Treatment, Prevention and Epidemic Preparedness of Typhoid Fever (2001)
- Scientific Advisory Committee, New Mucosal Vaccination Strategies for Diarrhea, School of Biological Sciences, University of London (2009)
- WHO-Korean FDA joint committee on Quality, Safety and Efficacy of Typhoid Vi conjugate vaccine (2012)
- Committee, WHO Typhoid Conjugate Vaccine Guideline (2013)
- Scientific Advisor, International Vaccine Institute (through IVI-NIH Technology Transfer Agreement) (2002-present)
- Sabin Vaccine Institute, Coalition against Typhoid (2010-present)

## PATENT ISSUED

- Polysaccharide-protein conjugate  
US patent 5,204,098
- Synthesis of typhoid fever vaccine from a plant or fruit polysaccharide  
US patent 5,738,855  
German patent 6,952,5638.  
Italy patent 95 93 5689.0  
Korean patent 10-433,986  
European patent 078,7015
- Method of immunizing humans against Salmonella typhi using a Vi-rEPA ...  
US patent 6,797,275
- Vaccine against E coli O157 infection – children immunization  
US patent 7,247,307
- Vaccine against E coli O157 infection – conjugate vaccine
  - US patent 6,858,211
  - Australia patent 767,047
- Polysaccharide-protein conjugates  
US patent 5,204,098
- A method for passively protecting a human against E. coil O157  
US patent 7,553,490

## PROFESSIONAL SOCIETIES :

American Association for the Advancement of Science  
Biophysical Society  
New York Academy of Sciences  
American Society of Microbiology

## HONORS AND AWARDS:

- 1993 U.S. Patent 5,204,098 Polysaccharide Protein Conjugates.
- 1996 Merit Achievement Award, National Institutes of Health, USA
- 1997 Foreign Expert Award: for Special Contributions to Vaccine Development in China, Lanzhou Institute of Biological Products, Lanzhou, People's Republic of China.
- 2001 Secretary's Distinguished Service Award, US Department of Health & Human Services, USA Government
- 2003 Dean's Award, School of Engineering and Bioengineering, University of Calabria, Calabria, Italy
- 2004 Dunhuang Outstanding Award, Gansu Provincial Government, China
- 2005 Foreign Advisor's Award, National Institute of Hygiene and Epidemiology, Minister of Health, Vietnam
- 2005 Golden Embroidered Ball Award, Centers for Disease Control and Prevention, Guangxi, China
- 2006 Outstanding Alumni, National Cheng Kung University, Tainan, Taiwan
- 2012 Scholar in Residence, International Vaccine Institute, Seoul, Korea

## INVITATION LECTURES:

- 1992 Invited Speaker, NIH-University of Santiago Joint Workshop, Santiago, Chile.
- 1992 Invited Speaker, NATO Advanced Research Workshop, Messina Portorosa, Sicily, Italy.
- 1992 Invited Speaker, Bacterial Polysaccharides in Infection Immunity and Vaccine Development Course, University of Goteborg, Goteborg, Sweden.
- 1993 Invited Lecturer, 28th Annual Regional Meeting of the Northeast, Eastern New York and Connecticut Valley Branches, American Society for Microbiology, Cambridge, Massachusetts.

- 1994 Invited Lecturer, International Bratislava Symposium on Saccharides, Smolenice, Slovakia.
- 1994 Invited Speaker, Second Asia-Pacific Symposium on Typhoid Fever, Bangkok, Thailand.
- 1995 Invited Speaker, Medical Faculty of the University of Indonesia, Jakarta, Indonesia.
- 1997 Advisor, Annual Achievement Meeting of Mechanism of Virulence in Enteric Bacteria, Taipei, Taiwan.
- 1997 Invited Speaker, Second Immunology Symposium - Basic Aspects of Vaccines, Bethesda, Maryland.
- 1997 Invited Speaker, 3rd International Symposium on Shiga Toxin (Verocytotoxin) Producing "Escherichia•"coli• Infections (VTEC), Baltimore, Maryland.
- 1997 Invited Speaker, Pathogenesis, Immunology and Therapy, International Conference on Glycoconjugates and Matrix Molecules in Health and Disease, Bethesda, Maryland.
- 1997 Invited Speaker, Third Asia©Pacific Symposium on Typhoid Fever and Other Salmonellosis, Bali, Indonesia.
- 1998 Invited Speaker, Bayer Corporation, Shawnee Mission, Kansas.
- 1998 Advisor, Annual Achievement Meeting - Mechanism of Virulence in Enteric Bacteria, Taipei, Taiwan.
- 1998 Invited Speaker, Fort Dodge Animal Health, Fort Dodge, Iowa.
- 1997 Invited Speaker, 1998 Annual Summer Toxicity Forum, Aspen, Colorado.
- 1998 Invited Speaker, The South African Institute for Medical Research, University of the Witwatersrand, Johannesburg, South Africa.
- 1998 Invited Speaker, New Frontiers in the Development of Vaccines against Enterohemorrhagic and Enterotoxinogenic E. coli Meeting, Tokyo, Japan.
- 1999 Advisor, Annual Achievement Meeting © Mechanism of Virulence in Enteric Bacteria, Taipei, Taiwan.
- 1999 Invited Speaker, Institute of Bio Agricultural Sciences, Academia Sinica, Taipei, Taiwan.

- 1999 Invited Speaker, Department of Biology, Johns Hopkins University, Baltimore, Maryland.
- 1999 Invited Speaker, 3rd International Meeting on New Approaches to Bacterial Vaccine Development, Munich, Germany.
- 1999 Invited Speaker, IV International Symposium on Typhoid Fever and Other Salmonellosis, Taipei, Taiwan.
- 1999 Invited Speaker, Department of Microbiology and Immunology, National Cheng Kung University, Tainan, Taiwan.
- 2000 Invited Speaker, Diseases of the Most Impoverished Program, The International Vaccine Institute, WHO Headquarters, Geneva, Switzerland.
- 2000 Invited Consultant, Working Group Meeting of the Diseases of the Most Impoverished Program (DOMI) Program, International Vaccine Institute, Seoul, Korea.
- 2000 Invited Speaker, 100<sup>th</sup> General Meeting of the American Society for Microbiology, Los Angeles, California.
- 2000 Invited Participant, 4<sup>th</sup> International Symposium and Workshop of Shiga Toxin (Verocytotoxin) – Producing Escherichia coli Infections, Kyoto, Japan.
- 2000 Invited Consultant, Bio Farma (Persero), Bandung, Indonesia.
- 2000 Invited Speaker, Department of Microbiology and Molecular Biology, University of Idaho, Moscow, ID
- 2001 Invited Speaker, American Chemical Society Annual Meeting, San Diego, CA.
- 2001 Invited speaker, 221<sup>st</sup> American Chemical Society National Meeting, San Diego, California
- 2001 Invited participant, Pectins & Enteric Disease (VED) 2001 Conference, Tampere, Finland
- 2001 Invited Speaker, Scientific Congerence on the Occasion of the 110<sup>th</sup> Anniversary of the Pasteur Institute, Ho Chi Minh City, Vietnam
- 2001 Invited Speaker, Center for Disease Control and Epidemiology, Nanning, Guangxi, China

- 2001 Invited Speaker, Department of Microbiology and Immunology, Cheng Kung University, Taipei, Taiwan
- 2001 Invited participant, International Vaccine Institute Seminar, Fogarty International Center, NIH, Bethesda, Maryland
- 2002 Consultant, Workshop for Typhoid Guideline, WHO, Hanoi, Vietnam
- 2002 Advisory External Committee, External Committee, CENTERS OF BIOMEDICAL RESEARCH EXCELLENCE (COBRE) University of Idaho, Moscow, Idaho
- 2002 Invited speaker, Vaccine for Developing Countries, Bio Farma and Department of Health, Jakarta, Indonesia
- 2002 Expert consultant, Bio Farma Inc., Bandung, Indonesia
- 2002 Expert consultant, Lanzhou Institute of Biological Product, China
- 2002 Expert Consultant, Chengdu Institute of Biological Product, China
- 2002 Invited Speaker, Symposium of American Society of Tropical Medicine and Hygiene, Denver, Colorado
- 2002 Invited Speaker and Consultant, Adimmune Inc., Taichung, Taiwan
- 2002 Invited Speaker, Department of Molecular Biology, Chung Shin University, Taichung, Taiwan
- 2003 Advisor, External Committee, CENTERS OF BIOMEDICAL RESEARCH EXCELLENCE (COBRE) COBRE NIH Grant, University of Idaho, Moscow, Idaho
- 2003 Advisor, Future Direction for Research on ETEC Vaccines for Development Countries, World Health Organization, Montreux, Switzerland
- 2003 Steering Committee on Diarrhoeal Diseases, World Health Organization, Montreux, Switzerland
- 2003 Advisor, The future of Rotavirus vaccine in China, workshop organized by CDC, PATH and WHO, Beijing, China
- 2003 External Committee, CENTERS OF BIOMEDICAL RESEARCH EXCELLENCE (COBRE), University of Idaho, Moscow
- 2004 Dean's Award, School of Engineering and Bioengineering, University of Calabria, Calabria, Italy

- 2004 Dunhuang Award, Lanzhou, Gansu Provincial Government, China
- 2005 Invited speaker, Advances in Vaccine Development, American Chemical Society Annual Meeting, Anaheim, CA.
- 2004 Steering Committee on Diarrhoeal Diseases, World Health Organization, Kingston, Jamaica
- 2004 Plenary Speaker, Vaccine for Enteric Diseases, Kingston, Jamaica
- 2004 Advisor, External Committee, Center of Biomedical Research Excellence (COBRE) NIH Grant review, University of Idaho, Moscow, Idaho
- 2004 Invited Coordinator and Speaker, ParaChina Workshop, International Vaccine Institute, Seoul, Korea
- 2005 Invited participant, DOMI Meeting on evaluating the DOMI model and defining a global agenda for cholera, typhoid and shigella vaccine development, introduction and use. Hanoi, Vietnam
- 2005 Committee member, WHO Steering Committee for Diarrhea Diseases Annual meeting, Paris, France
- 2005 Invited speaker, VI International Salmonella Symposium, Guilin, China
- 2005 Invited speaker, 40 Annual Meeting of Japan-US Cholera and other bacterial infection, Boston, Massachusetts
- 2005 Invited Expert Speaker, 54<sup>th</sup> American Society of Tropical Medicine and Hygiene, Washington
- 2005 Advisory External Committee, External Committee, CENTERS OF BIOMEDICAL RESEARCH EXCELLENCE (COBRE) University of Idaho, Moscow, Idaho
- 2006 Steering Committee for Rotavirus, WHO, Geneva, Switzerland
- 2006 Advisory External Committee, External Committee, CENTERS OF BIOMEDICAL RESEARCH EXCELLENCE (COBRE) University of Idaho, Moscow, Idaho
- 2006 Invited speaker, International Symposium on Enterotoxigenic Escherichia Coli (EHEC) Melbourne, Australia
- 2006 Steering Committee, WHO Diarrhoeal & Enteric Vaccine Steering Committee Annual Meeting, Cairo, Egypt

- 2007 Invited speaker, VI International Enteric Vaccine Symposium, Lisbon, Portugal
- 2007-2008 Committee member, WHO Diarrhoeal and Enteric Vaccines Advisory Committee, annual meeting
- 2007 Ancey typhoid Vaccine Global Immunization, Foundation Merieux, France
- 2007 WHO typhoid vaccination workshop for SAGE submission
- 2007 Advisory External Committee, External Committee, CENTERS OF BIOMEDICAL RESEARCH EXCELLENCE (COBRE) University of Idaho, Moscow, Idaho
- 2008 Invited speaker, India Academy of Pediatrics Annual Meeting, India
- 2008 Committee member, WHO Diarrhoeal and Enteric Vaccines Advisory Committee, Geneva, Switzerland, Annual Meeting
- 2008 Invited speaker, International Symposium of Vaccines for Enteric Diseases, Lisbon, Prorogues
- 2008 Advisory External Committee, External Committee, CENTERS OF BIOMEDICAL RESEARCH EXCELLENCE (COBRE) University of Idaho, Moscow, Idaho
- 2009 Scientific Advisory Committee, New Mucosal Vaccination Strategies for Diarrhea, School of Biological Sciences, University of London
- 2010 Scientific Advisory Committee, Typhoid Vaccine Investment Case proposal to World Health Organization, International Vaccine Institute, Seoul, Korea
- 2011 Invited speaker, Japan Taiwan Joint Conference on Infectious Disease and Signal Symposium, Tainan, Taiwan
- 2011 Invited member, Coalition against Typhoid, Sabin Institute, Washington DC
- 2011 Invited Speaker, Joint Meeting of 6 Chinese Institutes of Biological Products, Chengdu, China
- 2012 Member, Coalition against Typhoid, Sabin Vaccine Institute
- 2012 Invited speaker, World Health Organization and Korean Food Drug Administration, Work Shop on Vi Conjugate Manufacture and Regulatory Guideline, Jeju Island, Korea
- 2012 Invited speaker, Symposium of typhoid fever epidemiology and control, American Association of Tropical Disease and Hygiene, Annual meeting, Atlanta, GA



- 2013 Section chair, 8th International Conference on Typhoid Fever and Other Invasive Salmonellosis, Dhaka, Bangladesh
- 2013 Invited consultant, Modeling on typhoid disease-burden estimation, the effectiveness of various typhoid vaccination strategies, and cost-effectiveness. Bill Melinda Gates Foundation, Seattle, WA
- 2014 Invited speaker, Expert Consultation on review of evidence in support of the use of Vi conjugate typhoid vaccine. World Health Organization, Geneva, Switzerland
- 2015 Invited Speaker, International Conference of Typhoid and Non-typhoidal Salmonellae, Bali, Indonesia
- 2017 Invited Speaker, First International Workshop on Enteric Virus, Shanghai, China
- 2018 Invited Speaker, International Conference on Rotavirus Vaccine, Minsk, Belarus
- 2019 Invited Speaker, International Enteric Fever and Related Diseases, Vietnam

#### BIBLIOGRAPHY

(Over 100 publications, available upon request)