

BIOGRAPHICAL SKETCH

NAME	POSITION TITLE		
Charles J. Arntzen, Ph.D.	Regent's Professor		
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of Minnesota, Minneapolis, Minnesota	B.S.	1965	Plant Physiology
University of Minnesota, Minneapolis, Minnesota	M.S.	1967	Plant Physiology
Purdue University, Lafayette, Indiana	Ph.D.	1970	Cell Physiology
Charles F. Kettering, Lab, Yellow Spring, Ohio	Post-Doc.	1969-70	Photosynthesis

Professional Experience

1969-80	Assistant, Associate, and Professor, Department of Botany, University of IL
1973-74	Research Scientist, Laboratoire de Photosynthese du CNRS, Gif-sur-Yvette, France
1976-80	Plant Physiologist, USDA/SEA, Urbana, IL
1976	NATO Scientist, Laboratoire de Photosynthese du CNRS, Gif-sur-Yvette, France
1980-84	Director, MSU-DOE Plant Research Laboratory, Michigan State University
1981	ANU Fellow, Australian National University, Canberra, Australia
1983	Visiting Scientist, Academia Sinica, Beijing, China
1984-88	Director, Plant Science and Microbiology, DuPont Central Research & Development Department, and Director, Biotechnology Research, DuPont Agricultural Products Division, Wilmington, DE
1988-95	Deputy Chancellor for Agriculture, Dean, College of Agriculture and Life Sciences, Director, Texas Agricultural Experiment Station, Texas A&M Univ., College Station, Texas; Professor, Dept. of Biochemistry and Biophysics; Director, Plant Biotechnology Program, Institute of Biosciences and Technology, Texas A&M Univ., Houston, TX
1995-2000	President/CEO, Boyce Thompson Institute for Plant Research, Inc., Cornell University
2000-Present	Florence Ely Nelson Presidential Chair in Plant Biology, Regent's Professor (since 2004), Arizona State Univ., Tempe, AZ.

Honors and Awards

1979	Charles Albert Shull Award for Outstanding Research in Plant Physiology
1980	Award for Superior Service, US Department of Agriculture
1983	Elected Member of the National Academy of Sciences, USA
1984	Elected Fellow of the National Academy of Sciences, India
1985	Elected President, American Society of Plant Physiologists
1990-1997	Member, Board of Governors of the University of Chicago for Argonne National Laboratory. Member Executive Comm.; Chair of Scientific/Technical Advisory Board
1991-1993	Member and Chairman, NIH Biotechnology Policy Board
1991-1998	<i>SCIENCE</i> Editorial Board Member
1994	Dennis Robert Hoagland Award, American Association of Plant Physiologists
1994	Elected Fellow, AAAS
1997	Doctor of Science <i>honoris causa.</i> , Purdue University, School of Science
2001-Present	President George W. Bush's Council of Advisors on Science and Technology, and National Nanotechnology Advisory Board
2003	Doctor of Science <i>honoris causa.</i> , University of Minnesota

Selected publications:

- Tacket, C.O., Mason, H.S., Losonsky, G., Clements, J.D., Levine, M.M., C.J. Arntzen.** 1998. Immunogenicity in humans of a recombinant bacterial antigen delivered in a transgenic potato. *Nature Medicine*, 4:607-609.
- Beetham, P.R., P.B. Kipp, X.L. Sawycky, C.J. Arntzen, and G.D. May.** 1999. A tool for functional plant genomics: Chimeric RNA/DNA oligonucleotides cause in vivo gene-specific mutations. *Proc. Natl. Acad. Sci. USA* 96:8774-8778.
- Walmsley, A.M., C.J. Arntzen.** 2000. Plants for delivery of edible vaccines. *Current Opinion in Biotechnology* 2000. 11:126-129.
- Tacket, C.O., Mason, H.S., Losonsky, G., Estes, M.K., Levine, M.M., C.J. Arntzen.** 2000. Human immune responses to a Novel Norwalk virus vaccine delivered in transgenic potatoes. *J. of Inf. Dis.* 182:302-305.

- Richter, L.J., Thanavala, Y., Arntzen, C.J., H.S. Mason.** 2000. Production of hepatitis B surface antigen in transgenic plants for oral immunization. *Nature Biotechnology*. 18:1167-1171.
- Mor, T.S., Sternfeld, M., Soreq, H., Arntzen, C.J., Mason, H.S.** 2001. Expression of recombinant human acetylcholinesterase in transgenic tomato plants. *Biotechnology and Bioengineering*. 75:259-266.
- Kong Q, Richter L, Yang Y-F, Arntzen CJ, Mason HS, Thanavala Y.** 2001. Oral Immunization with hepatitis B antigen expressed in transgenic plants. *Proc. Natl. Acad. Sci. USA* 98:11539-11544.
- Haridas, V., Higuchi, M., Jayatilake, G.S., Bailey, D., Mujoo, K., Blake, M., Arntzen, C.J., Gutterman, J.U.** 2001. Avicins: Triterpenoid saponins from *Acacia victoriae* (Benth) induce apoptosis by mitochondrial perturbation. *Proc. Natl. Acad. Sci. USA* 98:5821-5826.
- Hanausek, M., Ganesh, P., Walaszek, Z., Arntzen, C.J., Slaga, T.J., Gutterman, J.U.** 2001. Avicins, a family of triterpenoid saponins from *Acacia victoriae* (Benth), suppress H-ras mutations and aneuploidy in a murine skin carcinogenesis model. *Proc. Natl. Acad. Sci. USA* 98:11551-11556.
- Haridas, V., Arntzen, C.J., Gutterman, J.U.** 2001. Avicins, a family of triterpenoid saponins from *Acacia victoriae* (Betham), inhibit activation of nuclear factor- κ B by inhibiting both its nuclear localization and ability to bind DNA. *Proc. Natl. Acad. Sci. USA* 98:11557-11562.
- Mason, H.S., Warzecha, H., Mor, T., Arntzen, C.J.** 2002. Edible plant vaccines: applications for prophylactic and therapeutic molecular medicine. *TRENDS in Molecular Medicine*. 8:324-329.
- Joshi, L., Van Eck, J.M., Mayo, K., Di Silvestro, R., Blake (Nieto), M.E., Ganapathi, T., Haridas, V., Gutterman, J.U., Arntzen, C.J.** 2002. Metabolomics of plant saponins; Bioprospecting triterpene glycoside diversity with respect to mammalian cell targets. *OMICS: J. of Integrative Biology*. 6:3:235-246.
- Rigano, M.M., Sala, F., Arntzen, C.J., Walmsley, A.M.** 2003. Targeting of plant-derived vaccine antigens to immunoresponsive mucosal sites. *Vaccine*. 21:809-811.
- Walmsley, A.M., Arntzen, C.J.** (2003) Plant cell factories and mucosal vaccines. *Current Opinion in Biotechnology*. 14(2):145-150.
- Arntzen, C.J., Coglán, A., Johnson, B., Peacock, J., Rodemeyer, M.** (2003). GM Crops: Science, Politics and Communication. *Nature Reviews Genetics*. 4:839-843.
- Smith, M.L., C.J. Arntzen, M.L. Shuler, H.S. Mason** (2003) Structural characterization of plant-derived hepatitis B surface antigen employed in oral immunization studies. *Vaccine*. 21:4011-21.
- Peterson, R.K.D, C.J. Arntzen** (2004) On risk and plant-based biopharmaceuticals. *Trends in Biotechnology*. 22(2):64-66.
- Khalsa G, Mason HS, Arntzen CJ.** (2004) Plant-derived vaccines: progress and constraints. In *Molecular Farming*, Ranier and Schillberg, eds. John Wiley and Sons. Wiley: Weinheim. p. 135-58.
- Mor, T.S., Mason, H.S., Kirk, D.D., Arntzen, C.J. and Cardineau, G.A.** (2004) Plants as Production and Delivery Vehicle for Orally Delivered Subunit Vaccines. In *New Generation Vaccines*, M.M. Levine, R. Rappuoli, M.A. Liu and M.F. Good, Editors. Marcel Dekker, Inc., New York-Basel. Third Edition; p. 305-312.
- Khalsa G, Mason HS, Arntzen CJ.** (2005) Plant-derived vaccines: progress and constraints. In *Molecular Farming*, Ranier and Schillberg, eds. John Wiley and Sons.
- Mason HS, Chikwamba R, Santi L, Mahoney RT, Arntzen CJ** (2004) Antigen delivery systems: Transgenic plants for mucosal vaccines. In: *Mucosal Immunology*, 3rd Edition. Section D. Mucosal Vaccines (McGhee JR, Mestecky JF, Eds) Elsevier Science, London, 2004, pp. 1053-1060.
- Thanavala, Y., M. Mahoney, S. Pal, A. Scott, L. Richter, N. Natarajan, P. Goodwin, C.J. Arntzen, H.S. Mason.** 2005. Immunogenicity in humans of an edible vaccine for hepatitis B. *Proc. Natl. Acad. Sci., U.S.* 102:3378-3382.
- Matoba N, Magérus A, Geyer BC, Zhang Y, Muralidharan M, Alfsen A, Arntzen CJ, Bomsel M, Mor TS.** (2004) A mucosally targeted subunit vaccine candidate eliciting HIV-1 transcytosis-blocking Abs. *Proc Natl Acad Sci U S A*. 101(37): 13584-13589.
- Maloney BJ, Takeda N, Suzaki Y, Ami Y, Li TC, Miyamura T, Arntzen CJ, Mason HS.** 2005. Challenges in creating a vaccine to prevent hepatitis E. *Vaccine* 23:1870-4.
- Huang Z, Elkin G, Maloney BJ, Beuhner N, Arntzen CJ, Thanavala Y, Mason HS.** 2005. Virus-like particle expression and assembly in plants: hepatitis B and Norwalk viruses. *Vaccine* 23: 1851-8.
- Arntzen C, Plotkin S, Dodet B.** 2005. Plant-derived vaccines and antibodies: potential and limitations. *Vaccine* 23: 1753-6.
- Santi L, Giritch A, Roy CJ, Marillonnet S, Klimyuk V, Gleba Y, Webb R, Arntzen CJ, Mason HS.** (2006) Protection conferred by recombinant *Yersinia pestis* antigens produced by a rapid and highly scalable plant expression system. *Proc Natl Acad Sci U S A*. 2006 103(4): 861-866.
- Huang Z, Santi L, LePore K, Kilbourne J, Arntzen CJ, Mason HS.** Rapid, high-level production of hepatitis B core antigen in plant leaf and its immunogenicity in mice. *Vaccine*. 2006 Mar 24;24(14):2506-13
- Saldana S, Esquivel Guadarrama F, Olivera Flores Tde J, Arias N, Lopez S, Arias C, Ruiz-Medrano R, Mason H, Mor T, Richter L, Arntzen CJ, Gomez Lim MA.** Production of rotavirus-like particles in

tomato (*Lycopersicon esculentum* L.) fruit by expression of capsid proteins VP2 and VP6 and immunological studies. [Viral Immunol.](#) 2006 Spring;19(1):42-53.