

## DOUGLAS S. BUSH

Marine Science Institute  
University of California  
Santa Barbara, CA

**Project:** *Population Genetics of Surfgrass (Phyllospadix torreyi) for Use in Restoration*

<b>Education:</b>	B.A.	Botany, University of Hawaii	1974
	M.S.	Plant Physiology, UC Berkeley	1979
	Ph.D.	Plant Physiology, UC Berkeley	1983

<b>Positions:</b>	2003-Present	Academic Coordinator, UC Santa Barbara
	1998-2003	Associate Research Biologist, Marine Science Institute, UC Santa Barbara
	1998-2003	Adjunct Associate Professor, Dept. of Ecology, Evolution, and Marine Biology, UC Santa Barbara
	1990-1997	Assistant/Associate Professor, Rutgers University, Dept. of Biological Sciences
	1989-1990	Assistant Research Botanist, UC Berkeley, Dept. of Botany
	1984-1989	Postdoctoral Associate, UC Berkeley, Dept. of Botany
	1979-1983	Research Associate, UC Berkeley, Dept. of Plant and Soil Biology
	1977-1979	Statistician, UC Berkeley, Dept. of Plant and Soil Biology

### Research Interests:

Genetics of natural plant populations, Evolutionary Genetics, Plant cell biology, cell calcium and transduction of hormonal signals. Membrane transport events induced by plant growth regulators. Programmed cell death.

### Awards:

Henry Rutgers Fellow, 1990  
EMBO Workshop Fellowship, Patch Clamp Techniques, Göttingen, West Germany, 1987  
Presidents Fellowship, University of California, Berkeley, 1980-1981

### Selected Publications:

- Rodriguez, M.T. and D.S. Bush. 1999. Gibberellin-induced cell death in the wheat aleurone. *Plant Physiology* (submitted).
- Silverman, P., A. Assiahmah, and D.S. Bush. 1998. Cytokinin action in root hairs of *Medicago sativa*. *Planta* **205**:25-31.
- Subbaiah, C., D.S. Bush, and M. Sachs. 1998. Mitochondria contribution to the anoxic Ca<sup>2+</sup> signal in maize suspension-cultured cells. *Plant Physiology* **118**:759-771.
- Thompson, M.D., D.S. Bush, and L.E. Bello. 1997. Possible Wilson's disease: A case presentation. *Archives of Clinical Neuropsychology* **12**(4):416-416.
- Bush, D.S. 1996. Effects of gibberellic acid and environmental factors on cytosolic calcium in wheat aleurone cells. *Planta*. **199**:89-99.
- Kuo, A., S. Cappellutti, M. Cervantes-Cervantes, M. Rodriguez, and D.S. Bush. 1996. Okadaic acid, a protein phosphatase inhibitor, blocks calcium changes, gene expression and cell death induced by gibberellin in wheat aleurone. *The Plant Cell* **8**:259-269.
- Rodriguez, M.T. and D.S. Bush. 1996. Programmed cell death and hormonal responses in wheat aleurone cells. *Molecular Biology of the Cell* **7**:2015-2015 Suppl. S.
- Silverman, F.P. and D.S. Bush. 1996. Membrane transport and cytokinin action in alfalfa root hairs. *Molecular Biology of the Cell* **7**:1761-1761 Suppl. S.

- Bush, D.S. 1995. Calcium regulation in plant cells and its role in signaling. *Annual Review of Plant Physiology. Plant Molecular Biology* **46**:95-122.
- Bush, D.S. and T. Wang. 1995. Diversity of calcium efflux transporters in wheat aleurone cells. *Planta*. **197**:19-30.
- Cervantes-Cervantes, M., S.J. Cappelluti, and D.S. Bush. 1995. Identification of Plant Ca<sup>2+</sup> Transport Proteins by Complementation in Yeast. *Plant Physiology* **108**(2):37-37 Suppl. S.
- Silverman, P., A. Assiamah, and D.S. Bush. 1995. Cytokinin Action in Medicago-Sativa Root Hairs. *Plant Physiology* **108**(2):46-46 Suppl. S.
- Subbaiah, C., D.S. Bush, and M. Sachs. 1994. Elevation of cytosolic calcium precedes anoxic gene expression in maize suspension-cultured cells. *The Plant Cell* **6**:1747-1762.
- Bush, D.S. 1993. Regulation of cytosolic calcium in plants. *Plant Physiology* **103**:7-13.
- Bush, D.S., A.K. Biswas, and R.L. Jones. 1993. Hormonal regulation of Ca<sup>2+</sup>-transport in the endomembrane system of the barley aleurone. *Planta* **189**:507-515.
- Bush, D.S. 1992. The role of Ca<sup>2+</sup> in the action of GA in the barley aleurone. In: CM Karssen, LC Van Loon, and D Vreugdenhil, eds. "Progress in plant growth regulation: Proceedings of the 14<sup>th</sup> International conference on plant growth substances, Amsterdam, 21-26 July, 1991." pp. 96-104. Kluwer Academic Pub., Dordrecht, The Netherlands.
- Drøbak, B.K., D.S. Bush, R.L. Jones, A.P. Dawson, and I.B. Ferguson. 1992. Analysis of calcium involvement in host-pathogen interactions. In: Gurr, S.J., M.J. McPherson, and D.J. Bowles eds. "Molecular Plant Pathology: A Practical Approach". Vol. II, pp. 159-194. IRL Press at Oxford University Press, Cambridge.
- Arnalte, M.E., M.J. Cornejo, D.S. Bush, and R.L. Jones. 1991. The effect of gibberellic acid on the lipid composition of barley aleurone protoplasts. *Plant Science* **77**:223-232.
- Bush, D.S., L. Sticher, and R.L. Jones. 1991. Gibberellic acid-regulated  $\alpha$ -amylase synthesis and calcium transport in the endoplasmic reticulum of barley aleurone cells. In: "Gibberellins: Tokyo 1989". pp. 106-113.
- Jones, R.L. and D.S. Bush. 1991. Gibberellic acid and abscisic acid regulate the level of a BiP cognate in the endoplasmic reticulum of barley aleurone cells. *Plant Physiology* **97**:456-459.
- Jones, R.L., L. Sticher, and D.S. Bush. 1991. Secretion of hydrolases from cereal aleurone cells. In: Hawes, C., J. Coleman and D. Evans, eds. "Endocytosis, Exocytosis and Vesicle Traffic in Plants", Cambridge University Press, Cambridge.
- Bush, D.S. and R.L. Jones. 1990. Hormonal Regulation of Ca<sup>2+</sup> transport in microsomal vesicles isolated from barley aleurone layers. Calcium in plant growth and development. Leonard and Hepler eds. *American Society of Plant Physiologists* **4**:60-65.
- Bush, D.S. and R.L. Jones. 1990. Measuring intracellular Ca<sup>2+</sup> levels in plant cells using the fluorescent probes, indo-1 and fura-2: progress and prospects. *Plant Physiology* **93**:841-845.
- DuPont, F.M., D.S. Bush, J.J. Windle, and R.L. Jones. 1990. Calcium and proton transport in membrane vesicles from barley roots. *Plant Physiology* **94**:179-188.
- Hillmer, S., D.S. Bush, D.G. Robinson, I. Zingen-Sell, and R.L. Jones. 1990. Endomembrane structure and function in barley aleurone protoplasts. *European Journal of Cell Biology* **52**:169-173.
- Sticher, L., A.K. Biswas, D.S. Bush, and R.L. Jones. 1990. Heat shock inhibits  $\alpha$ -amylase synthesis in barley aleurone without inhibiting the activity of endoplasmic reticulum marker enzymes. *Plant Physiology* **92**:506-513.