

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel in the order listed on Form Page 2.

Photocopy this page or follow this format for each person

NAME R. Malcolm Brown, Jr.	POSITION TITLE Professor, Johnson & Johnson Chair		
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i>)			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
The University of Texas at Austin	B.A..	1961	Botany
The University of Texas at Austin	Ph.D.	1964	Botany
The University of Freiburg i. Br. Germany	fellow	1969	Cell Biology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. DO NOT EXCEED TWO PAGES.

Research/Professional Experience:

- 1959-1961: Laboratory Assistant, Department of Botany, University of Texas at Austin,.
- 1961: Instructor, High School Biology, Concordia Junior College and High School.
- 1961-1964: Research Assistant, (with Dr. Harold C. Bold), Department of Botany, University of Texas at Austin.
- 1964-1965: Research Associate (with Dr. Wilson S. Stone, Hawaiian *Drosophila* Project).
- 1965: University Post Doctoral Fellow, Department of Botany, University of Texas at Austin.
- 1965-1968: Assistant Professor, Department of Botany, University of Texas at Austin.
- 1968-1973: Associate Professor, Department of Botany, University of North Carolina at Chapel Hill.
- 1970-1978: Member, Laboratories for Reproductive Biology, University of North Carolina School of Medicine.
- 1969-1982: Director, Electron Microscopy Laboratory, Department of Botany, University of North Carolina at Chapel Hill.
- 1973-1982: Professor, Department of Botany, University of North Carolina at Chapel Hill.
- 1981: Visiting Fellow, Department of Developmental Biology, Research School of Biological Sciences, The Australian National University, Canberra, Australia.
- 1982-1999: Professor, Department of Botany, The University of Texas at Austin.
- 1999-present: Professor, Section of Molecular Genetics and Microbiology, The University of Texas at Austin.
- 1982-present: Johnson & Johnson Centennial Chair in Plant Cell Biology, The University of Texas at Austin

Fellowships, Awards, and Honors:

- Darbaker Prize in Phycology, July 1978.
- Lamb Award, University of Nebraska. 1980.
- Anselme Payen Award, American Chemical Society, 1986.
- Fellow, The International Academy of Wood Science, August, 1983 - present.
- Senior Research Fellow - IC² Institute, 1986-present.
- President, Sigma Xi (University of North Carolina Chapter), 1981-1982.
- Fellow, Japanese Society for the Promotion of Science - Japan, May-June, 1992.
- Inductee, Pampa High School Hall of Fame, Pampa, Texas, May, 1997
- Winner, The 2003 World Technology Award in the category, "Environment" visit:<http://www.wtn.net>

Patents, Entrepreneurial Experience:

More than 40 patents including US and international patents

Founder of the following companies: *Advanced Cellulose Technologies, Inc, Global Cellulose, Inc., Phykotek, Inc.*

Inventor of Electronic Paper

Other Experience:

Musician and composer, served on College of Fine Arts doctoral committees.

Producer of 6 original audio CDs, Novelmusic Com (www.novelmusic.com)

Continuously teaching Bio323L, Laboratory Methods in Cell Biology since 1990.

Gardening and photography as hobbies (visit:

<http://www.botany.utexas.edu/facstaff/facpages/mbrown/Mbrownhome/garden/>

Selected peer-reviewed publications on microbial cellulose since 1976 (from a total of 226 publications)

Brown, R.M., Jr., J.H.M. Willison, and C. L. Richardson. 1976. Cellulose biosynthesis in *Acetobacter xylinum*: Visualization of the site of synthesis and direct measurement of the *in vivo* process. *Proc. Nat. Acad. Sci. U.S.A.* **73**(12):4565-4569.

Benziman, M., C.H. Haigler, R.M. Brown, Jr., A. R. White, and K. M. Cooper. 1980. Cellulose biogenesis: polymerization and crystallization are coupled processes in *Acetobacter xylinum*. *Proc. Nat. Acad. Sci. U.S.A.* **77**:6678-6682.

Saxena, I. M., F. C. Lin, and R. M. Brown, Jr. 1990. Cloning and sequencing of the cellulose synthase catalytic subunit gene of *Acetobacter xylinum*. *Plant Molecular Biology* **15**:673-683.

Brown, Jr. R. M., Barnes, Z., Sawatari, C., and T. Kondo. 2007. Polymer manipulation and nanofabrication in real time using transmission electron microscopy. *Biomacromolecules* **8**:70-76.

Nobles, Jr., D.R. and R. M. Brown, Jr. 2007 Many Paths up the Mountain: Tracking the Evolution of Cellulose Biosynthesis *In Cellulose: Molecular and Structural Biology*. Springer pp 1-15.

Sharma, N. K., Rai, A.K., Singh, S. and R. Malcolm Brown, Jr.. 2007. Airborne Algae: Their present status and relevance. *J. Phycology* **43**:615-627.

Czaja, W.K., Young, D.J., Kawecky, M., and R. M. Brown, Jr. 2007. The future prospects of microbial cellulose in biomedical applications. *Biomacromolecules* **8**:1-12

Nobles, Jr. D.R. and R. M Brown, Jr. 2008. and Brown Transgenic expression of *Glauconacetobacter xylinus* strain 53582 cellulose synthase genes in the cyanobacterium *Synechococcus leopoliensis* strain UTCC 100. *Cellulose* **15**: 691-701.

Bowling, A. and R. M. Brown, Jr. 2008. The Cytoplasmic Domain of the Cellulose Synthesizing Complex in Vascular Plants *Protoplasma* **233**:115-127

T Kondo, W Kasai, M Nojiri, Y Hishikawa, E Togawa, D Romanovicz, and R M Brown Jr. 2012. Regulated patterns of bacterial movements based on their secreted cellulose nanofibers interacting interfacially with ordered chitin templates, *Journal of Bioscience and Bioengineering* **11**: 113-120.

Selected Patents

Recombinant Cellulose Synthase. I. Saxena, F.C. Lin, and R. M. Brown, Jr. Submitted. 1990. The University of Texas at Austin. **Patent # 6,541,238.**

High resolution low dose transmission electron microscopy real-time imaging and manipulation of nano-scale objects in the electron beam. **Brown, Jr.; R. Malcolm** (Austin, TX), **Barnes; Zack** (Austin, TX), **Sawatari; Chie** (Shizuoka, **JP**), **Kondo; Tetsuo** (Kukuoka, **JP**) . Patent # **7,335,882** Feb 20, 2008.