

## John Ralph

Departments of Biochemistry, and Biological Systems Engineering, and the Wisconsin Energy Initiative, and the DOE Great Lakes Bioenergy Research Center  
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### Educational Background

- 1976 B.Sc. (Hons). Chemistry, Canterbury U., New Zealand (Thesis: *Lithium Aluminium Hydride Reduction of Propargyl Alcohols*. Supervisor: Michael P. Hartshorn)  
1982 Ph.D. Chemistry/Forestry, U. Wisconsin-Madison (Thesis: *Reactions of Lignin Model Quinone Methides and NMR Studies of Lignins*. Supervisors: Raymond A. Young, Larry Landucci)

### Professional Experience

- 1974-1987 Research Scientist, Forest Research Institute (F.R.I.), Rotorua, New Zealand.  
1987-1988 Scientific Head of Research Laboratory for Nuclear Magnetic Resonance Spectroscopy, Chemistry Department, U. California-Berkeley, Berkeley, CA.  
1988-2008 Research Chemist, USDA-ARS, U.S. Dairy Forage Research Center.  
1988-1995 Assistant Professor, Department of Forestry, U. Wisconsin-Madison.  
1995-1999 Associate Professor, Department of Forestry, U. Wisconsin-Madison.  
1999-2006 Full Professor, Department of Forestry, U. Wisconsin-Madison.  
2006-present Full Professor, Dept. Biological Systems Engineering, U. Wisconsin-Madison.  
2008-present Full Professor, Dept. of Biochemistry, U. Wisconsin-Madison  
2008-present 'Improved Plant Biomass' Area Leader, Great Lakes Bioenergy Research Ctr.

### Other Professional Appointments

Editorial Boards: *BioEnergy Research*, *J. Wood Chemistry and Technology*, *Holzforschung*, *J. Science of Food and Agriculture*, *Journal of Wood Science* (Japan Wood Soc.)  
Scientific Advisory Boards: Joint BioEnergy Institute, Berkeley, CA; FuncFiber, Umeå, Sweden  
Other role: "Plants Area" leader, Great Lakes Bioenergy Research Center

### Specialization and Areas of Professional Experience

- General plant cell wall (CW) chemistry/biochemistry.
- Lignin Biosynthesis (including pathway delineation), Lignin Chemistry, Lignin Reactions.
- Synthesis of biosynthetic products, precursors, intermediates, molecular markers, cell wall model compounds, etc.
- Solution-state NMR (particularly of CW components, especially lignins); methods development.
- Cell wall cross-linking mechanisms.
- Methods for wall structural analysis (chemical/degradative, NMR, GC-MS, etc.).

### Recent Awards

- 2012 Fulbright fellowship, Vienna 2012-13.  
2012 Stanford's GCEP (Global Climate and Energy Program) Distinguished Lecturer Award.  
2008 Thomson Reuters' Essential Science Indicators as one of the most cited papers: "Lignin Biosynthesis" in *Annual Review of Plant Biology* (2003).  
2007 Selected by the Institute for Scientific Information (ISI) for HighlyCited.com because of "Exceptional citation count in the field of Agricultural Science."  
2007 Top 50 cited papers award, *Carbohydrate Research* **339**(11), 2009-2017.  
2005 Elected *Fellow of the American Association for the Advancement of Science* (AAAS)

### Publications and Scholarship

Some 250 peer-reviewed publications

Google Scholar Citations: <http://scholar.google.com/citations?user=gkLpFa4AAAAJ>

Full-text Publications are available directly from a crude pdf repository at:

[https://mywebspace.wisc.edu/jralph/RalphLab\\_Publication\\_PDFs](https://mywebspace.wisc.edu/jralph/RalphLab_Publication_PDFs)

## **Fulbright Fellowship and BOKU ‘Mission’**

### **1. *Research Project (Collaborative)***

“Characterization and Valorization of Lignins from Biomass Processing Plants”

### **2. *Education and Training***

- NMR

Update BOKU on: lignin NMR; whole cell wall NMR; automated assignments, integrals, plotting.

Learn from BOKU: diffusion NMR, and solid-state methods.

- Lignin – Teach lignification mechanisms, biochemical pathways
- Methods – Exchange expertise on methods of cell wall analysis
- Miscellaneous – Vector art methods

### **3. *General***

- Develop long-term collaborative interests.
- Enjoy Austria and Wien, the culture, and all the wonderful people here! – Develop long-lasting connections.