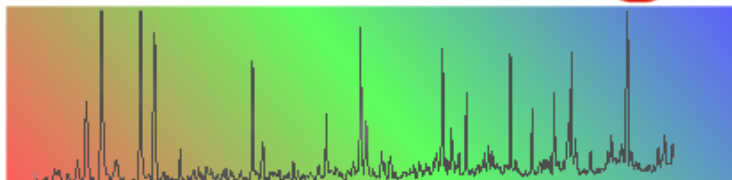




# SAS-Chicago



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Please visit our linked business cards on the [last page](#) of this flyer.

## November Meeting

Tuesday, November 14, 2006

The November 2006 meeting will be held at the Wellington Restaurant, located at 2121 S Arlington Heights Rd, Arlington Heights, IL 60005. See the map on the following page.

Social Hour: 5:30 - 6:30 PM

Dinner: 6:30 PM

Speaker: 7:30 – 9:00 PM

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### Structural and Functional Roles of Oxygen in Saccharides

by

**Anthony S. Serianni, Ph. D.**

*Professor, University of Notre Dame*

The polyfunctionality of saccharides is largely responsible for their diverse chemical and biological properties. The high density and variable distribution of oxygen atoms and their lone-pairs specify how these biomolecules engage non-covalently with themselves and their environment, from transient interplay with solvent water to exploiting the solvation mimicry in the binding sites of saccharide biological receptors. Saccharide oxygen chemistry includes hydroxyl ionization, bond and molecular polarity, hydrogen bonding, and C-O bond conformation and dynamics involving free C-O(H) or tethered C-O(R) groups. We have been engaged over the past 12 years in systematic studies of NMR J-couplings in oligosaccharides, using experimental and theoretical methods, to establish new structure-function relationships in solution. For example, correlations have been discovered between (a)  $^1J_{CH}$  and hydrogen bond strength in H-C-O-H fragments, (b)  $^1J_{CC}$  and C-C and C-O torsions in HO-C-C-OH fragments, (c)  $^2J_{CH}$  and C-O(H) and C-O(R) torsions, and (d)  $^4J_{CH}$  and exocyclic  $CH_2OH$  conformation. Previously unrecognized dual dependencies of some scalar couplings provide an opportunity to study correlated conformational behaviors, and trans-glycoside J-couplings measured in samples labeled strategically with  $^{13}C$  permit rapid linkage classification according to conformational preference, determinations of rotamer populations about the single bonds comprising glycosidic linkages, and definitive evaluations of the effect of structural context on linkage conformation and dynamics.

Implications for studies of complex oligosaccharides, unexpected secondary observations, current conundrums, and future challenges and opportunities will be discussed.

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Please make your dinner reservations for the upcoming meeting by email at [sas.chicago@bigfoot.com](mailto:sas.chicago@bigfoot.com), by using the form on our web page < [http://www.sas\\_chicago.org/Online%20Registration%20at%20Wellington.htm](http://www.sas_chicago.org/Online%20Registration%20at%20Wellington.htm)> or by calling Mike Jankowski at 847-970-5061. Leave your name, company affiliation, a telephone number, the number of reservations and your choice of entree. Please call by noon Friday, Nov. 10th, so that proper arrangements can be made with the restaurant. If you can't attend, cancel by Mon. noon: SAS is charged for no-shows.

**Entree choices: London Broil with Bordelaise Sauce, Breast of Chicken with Teriyaki Sauce, or Vegetarian Fettuccine.**

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Dinner Cost Members: \$25

Students and Unemployed Members: \$10  
(No Shows may be Billed)

Non-members: \$30

## **Biography of Anthony S. Serianni, Ph. D.**

Anthony Serianni was born in Chestnut Hill, Pennsylvania and received his B.S. in biochemistry in 1975 from Albright College, Reading, PA. He pursued graduate studies in the Department of Biochemistry at Michigan State University, earning his Ph.D. in 1980 under the guidance of Professor Robert Barker. He moved to Cornell University, Section of Biochemistry, for postdoctoral training, and in 1982, joined the faculty in the Department of Chemistry and Biochemistry at the University of Notre Dame, where he is currently Professor of Chemistry and Biochemistry. Some of Prof. Serianni's research interests include methods development for site-specific labeling of carbohydrates, conformational studies of simple and complex carbohydrates related to the N-glycans of human glycoproteins by NMR, applications of molecular orbital theory to aid in the interpretation of NMR parameters, and structure-function studies of non-enzymic protein glycation. Dr. Serianni has co-authored over 100 peer-reviewed research papers, and has been a recipient of the Horace S. Isbell Award (1988) from the Division of Carbohydrate Chemistry, American Chemical Society. He has also received the John Boezi Memorial Alumnus Award from Michigan State University (2001) and the Distinguished Alumnus Award from Albright College (1996). He recently received the Melville L. Wolfrom Award from the Division of Carbohydrate Chemistry, American Chemical Society (2006).

Professor Serianni co-founded Omicron Biochemicals, Inc. in 1982, a biotech company specializing in the synthesis of stable isotopically labeled carbohydrates, nucleosides and their derivatives. Now in its 24th year of operation, Omicron is located in South Bend, Indiana and supplies a wide range of non-GMP and GMP products to an international group of clients.

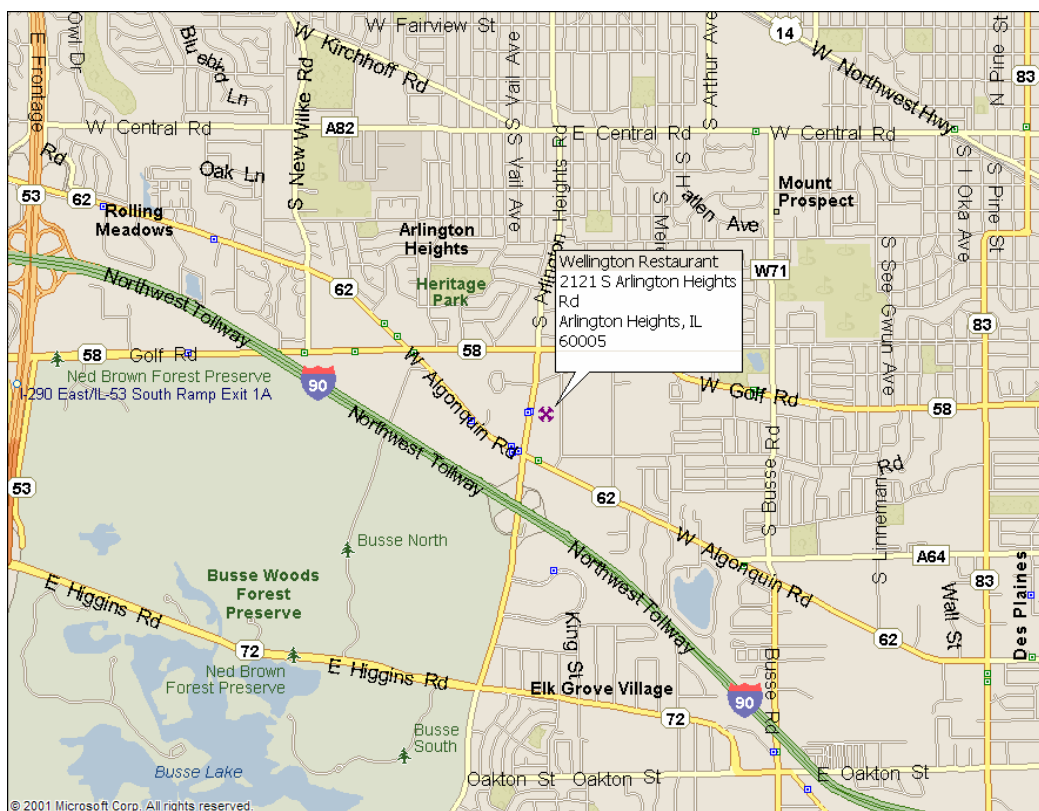
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## **DIRECTIONS TO THE WELLINGTON RESTAURANT**

From Chicago: Take Interstate 90 (Northwest Tollway) west to Arlington Heights Road exit. Proceed north to the restaurant.

From the southwest: Take 355 north to Route 53 north and exit at Algonquin Road east. Go to Arlington Heights Road. Turn left (north) and proceed to the restaurant.



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