

2018 Fall Chem 501 Seminar

TEXAS

The University of Texas at Austin
Department of Chemistry
College of Natural Sciences



Dr. Jonathan Sessler

R. P. Doherty, Jr. - Welch Regents Chair in Chemistry

Thursday – November 15, 2018

Refreshments 3:25pm, Buehler 513

Lecture at 3:45pm, Buehler 555

<https://cm.utexas.edu/component/cobalt/item/12-chemistry/135-sessler-jonathan-1?Itemid=1251>

Hosted by: Dr. Craig Barnes

“Texaphyrins as Drug Candidate: Life, Death, and Attempts at Resurrection”

Expanded porphyrin is a term we introduced into the literature in 1988 to describe larger homologues of natural and synthetic tetrapyrrolic macrocycles. Expanded porphyrins, along with many other contracted, isomeric, and core-modified porphyrin analogues, are now known. Expanded porphyrins, in particular, have seen application in areas as diverse as anion recognition and transport, self-assembly, liquid-liquid ion extraction, photodynamic therapy, and anticancer drug development. In this lecture, a specific focus will be placed on the first set of expanded porphyrins to act as metal complexing agents, the so-called texaphyrins. Two of the texaphyrin complexes, known as MGd and MLu, were the founding technology for Pharmacyclics, Inc., a company that later developed a best-selling leukemia drug and was acquired by AbbVie for \$21B in 2015. New work exploiting lessons learned from the early days of Pharmacyclics, Inc. and leading to the founding of Cible, Inc. will then be described in detail. Some non-biomedical aspects of expanded porphyrin chemistry, including recent collaborative work devoted to creating so-called 3D aromatic molecules, will be presented as time permits.

This work has benefited from support from the U.S. National Science Foundation, The National Institutes of Health, the Cancer Research and Prevention Institute of Texas, as well as the R. A. Welch Foundation. Productive collaborations with a number of groups, including those of Profs. Dongho Kim, Shunichi Fukuzumi, T.K. Chandrashekar, Christophe Bucher, Dirk Guldi, Pradeepta Panda, Changhee Lee, Jan Jeppesen, Masatoshi Ishida, and Tomas Torres, are also gratefully acknowledged.

*Dr. Jonathan L. Sessler was born in Urbana, Illinois, USA on May 20, 1956. He received a B.S. degree (with Highest Honors) in chemistry in 1977 from the University of California, Berkeley. He obtained a Ph.D. in organic chemistry from Stanford University in 1982 (supervisor: Professor James P. Collman). He was a NSF-CNRS and NSF-NATO Postdoctoral Fellow with Professor Jean-Marie Lehn at L'Université Louis Pasteur de Strasbourg, France. He was then a JSPS Visiting Scientist in Professor Tabushi's group in Kyoto, Japan. In September, 1984 he accepted a position as Assistant Professor of Chemistry at the University of Texas at Austin, where he is currently the Doherty-Welch Chair. Dr. Sessler has authored or coauthored over 700 research publications, written two books (with Dr. Steven J. Weghorn and Drs. Philip A. Gale and Won-Seob Cho, respectively), edited two others (with Drs. Susan Doctrow, Tom McMurry, and Stephen J. Lippard, Placido Neri and Mei-Xiang Wang), and been an inventor of record on over 75 issued U.S. Patents. To date, Dr. Sessler's work has been featured on more than 50 journal or book covers. His current H-index is 98. Dr. Sessler is an Associate Editor for **ChemComm**. Dr. Sessler is a co-founder (with Dr. Richard A. Miller) of Pharmacyclics, Inc., which was acquired by AbbVie for \$21B in 2015. He is currently launching Cible, Inc. with Dr. Jonathan F. Arambula and Ms. Karen Strnad. Dr. Sessler has served as the co-organizer of several international conferences in porphyrin, supramolecular, and macrocyclic chemistry and numerous ACS symposia. In addition to English, he speaks French, Spanish, German, and Hebrew reasonably well and can get by in Japanese. He struggles with Korean. Dr. Sessler's work has been recognized with several awards, including the ACS Cope Scholar Award, the RSC Centenary Prize, the Southwest Regional ACS Award, the Molecular Sensors-Molecular Logic Gates Award, the CASE award, and the Hans Fischer Award. He is a member of the U.S. National Academy of Inventors and was named Inventor of the Year at The Univ. of Texas at Austin in 2016. He was recently named the 2018 Thomas Dougherty awardee in Photodynamic Therapy.*