SIEMENS | Foundation

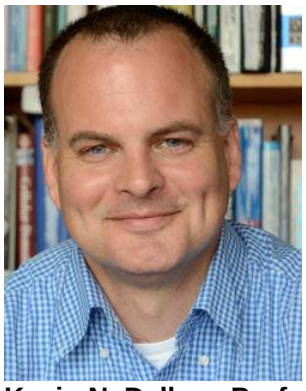
# Siemens Competition
# 2015 Regional Finals
# University of Texas at Austin Judges

## Lead Judge
## Bradley J. Holliday – Associate Professor
## Department of Chemistry

Brad Holliday received his B.S. degree in Chemistry with honors from Allegheny College in Meadville, Pennsylvania in 1997. He completed his Ph.D. degree at Northwestern University in 2002 under the supervision of Professor Chad A. Mirkin in the area of supramolecular coordination chemistry. After a postdoctoral appointment at MIT with Professor Timothy Swager, he joined the faculty in the Department of Chemistry at The University of Texas at Austin in July 2005. The Holliday Research Group is broadly interested in studying problems at the interface of Inorganic and Materials Chemistry. In this area of inorganic materials interdisciplinary research includes the study of both small molecule and polymeric structures containing transition and f-block metals. Current research projects range from classic organometallic chemistry issues of transition metal bonding and reactivity to the synthesis of complex inorganic/organic hybrid structures and metallopolymers. Many of the Group's research goals stem from the basic premise that the incorporation of active metal complexes directly into the backbone of conducting polymers has the potential to produce new hybrid materials which take full advantage of the unique properties of both components. In addition to the fabrication of new materials and devices, they strive to design and synthesize clever model systems to gain an understanding of the most fundamental properties and phenomena of conducting metallopolymer architectures (i.e. mechanisms of conductivity, redox-controlled binding, inter- vs. intra-chain charge transport, etc.).

**Nigel Atkinson – Professor**
**Department of Neuroscience**

Nigel Atkinson received his B.S. is in Microbiology from Texas A&M. For his Ph.D., he studied yeast RNA processing at the Hershey Medical Center of Penn State University. As a postdoctoral fellow at The University of Wisconsin-Madison, Dr. Atkinson studied Drosophila neurogenetics and cloned the first example of a BK type Ca2+-activated K+ channel gene. He started his own lab at the University of Texas at Austin in January of 1991.



**Kevin N. Dalby – Professor**
**College of Pharmacy**

Dr. Kevin N. Dalby was born in Bedford, England. He obtained a B.Sc. in chemistry (1st class with honors) in 1988 from the University of Leeds. He received a Doctor of Philosophy in Organic Chemistry in May 1992 from The University of Cambridge. The Title of his Dissertation was 'Models of Nuclease Activity'. His Research Advisor was Professor Anthony J. Kirby, FRS. In May 1992 he became a postdoctoral fellow, in the laboratory of Professor William P. Jencks, FRS at Brandeis University. In May 1994 he became a Medical Research Council postdoctoral fellow with Professor Sir Philip Cohen, FRS at Dundee University. In September 1997 he took a tenuretrack position as assistant professor at The University of Texas at Austin, College of Pharmacy. He obtained tenure and is currently Professor and the Southwestern Drug Corporation Centennial Fellow. Dr. Dalby is also a co-director of the Texas Screening Alliance for Cancer Therapeutics. His current research interests focus on understanding signal transduction pathways in cancer cells and developing therapeutic strategies to treat cancers.

**Richard Hazeltine – Professor**
**Department of Physics**

Richard Hazeltine is Professor of Physics and Director of the Institute for Fusion Studies at The University of Texas at Austin. He specializes in theoretical plasma physics, especially with regard to controlled fusion, and is best known for his work in transport theory, magnetized plasma stability and nonlinear fluid modeling. He has published over a hundred papers and is co-author of two books about plasma physics and confining hot plasma. A graduate of Harvard College (A.B., 1964) and the University of Michigan (Ph.D., 1968), Hazeltine spent two years at the Institute for Advanced Study in Princeton before joining the University of Texas in 1971. In 1980, he helped establish the Institute for Fusion Studies at Texas, becoming its Director in 1991. Hazeltine is Past Chair of the Division of Plasma Physics, and Councillor for the Division in the American Physical Society. He is Chair of the Theory Coordinating Committee for the Office of Fusion Energy and the Program Advisory Committee for General Atomics. He is a member of the Fusion Energy Scineces Committee, US Department of Energy and has served on the on numerous advisory committees, including the Steering Committee for the Technical Planning Activity of the Magnetic Fusion Energy Program and the Advisory Committee for Fusion Energy Postdoctoral Research and Professional Development Programs. He presently serves on the Board of Physics and Astronomy of the National Research Council. Hazeltine has served on the editorial boards of Physical Review, and The Physics of Fluids, and Reviews of Modern Physics. He is a Fellow of the American Physical Society.

**Adrian Keatinge-Clay – Associate Professor**
**Department of Chemistry**

Dr. Keatinge-Clay received his Ph.D. from the University of California at San Francisco in 2004. As an Associate Professor in Chemistry he heads up the Keatinge-Clay Polyketide Lab focusing on Natural Product Biochemistry: Many important pharmaceuticals, including

the antibiotic erythromycin and the immunosuppressant rapamycin, belong to a diverse class of molecules called polyketides. These complex molecules are synthesized by modular polyketide synthases (PKSs) - enormous enzymes that are directly analogous to assembly lines. Our group seeks to understand this chemical machinery and engineer it to produce new molecules and new medicines.

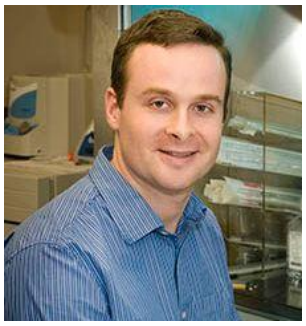
**Alan Lloyd – Professor**
**Department of Molecular Biosciences**

The main goal of my lab is to understand developmental mechanisms and pigment pathways in plants. The control of cell fate decisions is a central issue during plant development and pattern formation. One main focus of my lab is to use trichome (epidermal plant hair) initiation as a simple and amenable model to study the control of plant cell fate decision events. Over the years we have identified a combinatorial transcriptional complex that regulates trichome initiation and patterning. We are studying how this complex functions by manipulating the complex members and by investigating many of the complex's transcriptional targets. This complex also has pleiotropic control of the common red/purple anthocyanin pigment pathway in Arabidopsis and most other flowering plants. We have studied how the complex regulates these pigments and recently we have begun work on a red pigment pathway, the betalains, that are narrowly restricted to a single order of flowering plants that include beets, cactus and other taxa. The betalain pathway is much simpler than the anthocyanin pathway and has the potential to be used as a color and fluorescent marker in heterologous systems, fungi, animals and others.

**Frank Male – Postdoctoral Fellow**
**Bureau of Economic Geology**

Dr. Male is a postdoctoral fellow at the Bureau of Economic Geology at the University of Texas at Austin. He holds a BS in Physics and a BA in Political Science (2009) from Kansas

State University, and a Ph.D. in Physics from The University of Texas at Austin. As an undergraduate he was a research intern at the Max Planck Institute for Dynamics and Self-Organization in Goettingen, Germany.



**Steven Vokes – Associate Professor**
**Department of Molecular Biosciences**

Dr. Steven Vokes graduated from Swarthmore College with a Bachelor of Arts in Biology and received his doctoral degree in Molecular Biology from The University of Texas at Austin, examining the process of blood vessel formation during early embryonic development under the supervision of Dr. Paul Kreig. As a postdoctoral fellow at Harvard University, the studied developmental genetics and genomics in Dr. Andy McMahon's laboratory and was the recipient of Helen Hay Whitney and Charles A. King postdoctoral fellowships. He joined the faculty at UT Austin in 2008 and is currently an Associate Professor in the Department of Molecular Biosciences. His research, supported by the National Institute for Health seeks to characterize the molecular pathways and circuitry that execute Hedgehog signaling and regulate limb formation in the mouse embryo.

**Rachel Ward – Assistant Professor**
**Department of Mathematics**

Rachel Ward received her Ph.D. in Applied Mathematics at Princeton University in 2009. She was then at NYU's Courant institute as a postdoc form 2009-2011. Since 2011, she has been an Assistant Professor I the mathematics department at UT Austin. Her research in mathematical signal processing, combining tools from analysis, probability, and optimization. She received a Sloan Fellowship in 2012, an NSF CAREER award in 2013, and an AFOSR Young Investigator award in 2013.