



E. T. Kool

The author presented on this page has recently published his **10th article** since 2000 in *Angewandte Chemie*:
 “Protease Probes Built from DNA: Multispectral Fluorescent DNA–Peptide Conjugates as Caspase Chemosensors”: N. Dai, J. Guo, Y. N. Teo, E. T. Kool, *Angew. Chem.* **2011**, 123, 5211–5215; *Angew. Chem. Int. Ed.* **2011**, 50, 5105–5109.

Eric T. Kool

Year of birth:	1960
Position:	George and Hilda Daubert Professor of Chemistry, Stanford University (USA)
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Education:	1983 B.S. in Chemistry, Miami University, Oxford, Ohio (USA) 1987 Ph.D. with Ronald Breslow, Columbia University, New York (USA) 1987–90 Postdoctoral fellow with Peter Dervan, Caltech, Pasadena (USA)
Awards:	1993 Camille and Henry Dreyfus Teacher-Scholar Award; 1994 Alfred P. Sloan Foundation Fellow; 2000 Pfizer Award of the American Chemical Society; 2000 Arthur C. Cope Scholar Award (ACS); 2002 Fellow of the American Association for the Advancement of Science
Current research interests:	Our research interests involve the design and study of new nucleic-acid-inspired molecules that perform useful functions in biological systems. For example, we are developing templated fluorogenic chemistries for the detection of cellular RNAs at single-nucleotide resolution. In another project, we are making oligomeric fluorescent DNA-like molecules (ODFs) that can sense many different molecular species in water or in air. We are also working to develop a new genetic system (xDNA) that we hope will one day function like the natural one, but with more useful features.
Hobbies:	Running, biking

What I look for first in a publication is ... a new idea.

If I were not a scientist, I would be ... a drummer in a struggling jazz band.

My favorite place on earth is ... the north rim of the Grand Canyon, a couple of miles down the Kaibab trail. Simply awesome.

The best stage in a scientist's career is ... the first three years as an independent professor. The freedom and possibilities are endless, the ideas are exciting, and the pressure to get funding hasn't arrived yet.

The best advice I have ever been given is ... “The work you do yourself is the work that will get you tenure”. My PhD advisor, Ronald Breslow, told me that, and I found it to be true. I stayed in the lab for 3–4 years as a young professor, and got a lot of work done.

The downside of my job is ... never-ending grant cycles.

My top three films of all time are ... Blade Runner (Ridley Scott), Alien (Ridley Scott), The Shawshank Redemption (Frank Darabont).

My favorite food is ... pizza. Definitely pizza.

My 5 top papers:

1. “Difluorotoluene, a Nonpolar Isostere for Thymine, Codes Specifically and Efficiently for Adenine in DNA Replication”: S. Moran, R. X.-F. Ren, S. Rumney, E. T. Kool, *J. Am. Chem. Soc.* **1997**, 119, 2056–2057. (The experiments in this paper showed us for the first time that DNA base pairs could be replicated well by a DNA polymerase without canonical Watson–Crick hydrogen bonds.)
2. “Artificial human telomeres from DNA nanocircle templates”: U. Lindström, R. Chandrasekharan, L. Orbai, S. Helquist, G. Miller, S. Fernandez, E. Orudjev, H. G. Hansma, E. T. Kool, *Proc. Natl. Acad. Sci. USA* **2002**, 99, 15953–15958. (In this work we introduced the concept of using small synthetic circular DNAs as templates for the synthesis of long telomeric repeat DNAs.)
3. “A Four-Base Paired Genetic Helix with Expanded Size”: H. Liu, J. Gao, S. R. Lynch, D. Saito, L. Maynard, E. T. Kool, *Science* **2003**, 302, 868–871. (This was our first paper introducing the concept of a new genetic system based on DNA bases and base pairs that are expanded by benzo-homologation.)
4. “Probing the active site tightness of DNA polymerase in subangstrom increments”: T. W. Kim, J. C. Delaney, J. M. Essigmann, E. T. Kool, *Proc. Natl. Acad. Sci. USA* **2005**, 102, 15803–15808. (Here we used a set of thymidine analogues of gradually increasing size to test how DNA is replicated in living systems.)
5. “Remarkable Sensitivity to DNA Base Shape in the DNA Polymerase Active Site”: H. O. Sintim, E. T. Kool, *Angew. Chem.* **2006**, 118, 2008–2013; *Angew. Chem. Int. Ed.* **2006**, 45, 1974–1979. (We tested a systematic series of variably shaped nonpolar aromatics as DNA base replacements.)

DOI: 10.1002/anie.201103835