

## T. ROSS KELLY

### THOMAS A. AND MARGARET A. VANDERSLICE PROFESSOR OF CHEMISTRY

#### Education

B.S. (Honors) Holy Cross College 1964  
Ph.D. University of California, Berkeley 1968

#### Experience and Awards

Summer Research Chemist, Lawrence Radiation Laboratory, Livermore, CA 1964  
N.S.F. Trainee, University of California, Berkeley 1965-68  
N.I.H. Postdoctoral Fellow, Brandeis University 1968-69  
Assistant Professor, Boston College 1969-74  
Associate Professor, Boston College 1974-80  
Professor, Boston College 1980-89  
N.I.H. Research Career Development Award 1975-80  
Member (ad hoc) N.I.H. Medicinal Chemistry, Bioorganic and Natural Products and Special Study Sections 1977-79  
1981, 1983, 1986-88  
1992, 1994  
Visiting Associate Professor, University of California, Berkeley 1/78-3/78  
Medicinal Chemist, Pfizer Inc., Groton, CT (sabbatical) 9/81-5/82  
Chairman, Department of Chemistry, Boston College 7/83-6/86  
Editor, Tetrahedron Symposia-in-Print #17 "Recent Aspects of Anthracycline Chemistry," Tetrahedron, 40, November 1984. 11/84  
Member (regular) of Chemotherapy and Hematology "Study Section," American Cancer Society. 1984-85  
*Resigned because of time conflicts with departmental chairmanship.*  
Vanderslice Professor of Chemistry, Boston College 1989-2019  
Journal of Organic Chemistry, Editorial Advisory Board 1996-2003  
Arthur C. Cope Scholar Award (American Chemical Society) 1996  
Regular Member NIH Medicinal Chemistry Study Section 1998-2002  
Teacher of the Year Award, Phi Beta Kappa (Boston College Chapter) 2004  
Fellow of the American Association of the Advancement of Science 2007  
Created "A Scientist's Curiosity Cabinet" website 2014  
120,000+ pageviews through March, 2021 2021  
Gravitational Illusions 2021  
(<https://www.youtube.com/watch?v=MBSRPuUibxk&t=24s>): this segment of A Scientist's Curiosity Cabinet went viral on YouTube in April and May, 2021, amassing in excess of 18,000,000 views.

## Publications

- T. R. Kelly, "Cool project: Wood in nearly three dimensions," Fine Woodworking Blog, March 2, 2021 (to access, google [Fine Woodworking Blog] and scroll to March 2, 2021).
- T. R. Kelly, "Organic Chemistry and Tree Fruit: The Control of Ethylene-Induced Ripening of Fruit in Cold Storage Warehouses," Chemical Education Xchange, Saturday 12/19/2020 in Blogs.
- T. R. Kelly and M.L. Snapper "NEWS & VIEWS. A Molecular Assembler." *Nature* 2017, 549, 336-337.
- M.D. Markey and T. R. Kelly, "Synthesis of Cribrostatin 6." *J. Org. Chem.* 2008, 73, 7441-7443. This paper was highlighted by the Editors as a "Featured Article."
- M.D. Markey and T. R. Kelly, "Troubleshooting a Molecular Motor: A Remarkably Stable N-Acyl Pyridinium Salt." (invited paper) *Tetrahedron* 2008, 64, 8381-8388.
- M.D. Markey, Y. Fu, and T. R. Kelly, Synthesis of Santiagonamine." *Org. Lett.* 2007, 9, 3255-3257.
- T.R. Kelly, X. Cai, F. Damkaci, S.B. Panicker, B. Tu, S.M. Bushell, I. Cornella, M.J. Piggott, R. Salives, M. Cavero, Y. Zhao, S. Jasmin, "Progress toward a Rationally Designed, Chemically Powered Rotary Molecular Motor." *J. Am. Chem. Soc.* 2007, 129, 376-386.
- M.M. O'Malley, F. Damkaci and T.R. Kelly, "Synthesis of Pterocellin A." *Org. Lett.* 2006, 8, 2651-2652.
- T.R. Kelly, E.L. Elliott, R. Lebedev and J. Pagalday, Synthesis of the Pyrazolo[4,3-e][1,2,4]triazine Family of Natural Products: Nostocine A, Fluviol A, and Pseudoiodinine." *J. Am. Chem. Soc.* 2006, 128, 5646-5647.
- T.R. Kelly (Editor) "Molecular Machines," Topics in Current Chemistry, Springer Verlag, Heidelberg, 2005, Vol. 262.
- A. Scopton and T.R. Kelly, "Synthesis of HKI 0231B." *J. Org. Chem.* 2005, 70, 100004-10012.
- T.R. Kelly, "Molecular Motors: Synthetic DNA-Based Walkers Inspired by Kinesin." *Angew. Chem. Int. Ed.* 2005, 44, 4124-4127.
- E.L. Elliott, S. M. Bushell, M. Cavero, B. Tolan and T. R. Kelly, "Total Synthesis of Nigellicine and Nigeglanine Hydrobromide." *Org. Lett.* 2005, 7, 2449-2451.
- T.R. Kelly, X. Cai, B. Tu, E. L. Elliott, G. Grossmann and P. Laurent, "Asymmetric Synthesis of the AB Ring System of Lactonamycin." *Org. Lett.* 2004, 6, 4953-4956.
- A. Scopton and T. R. Kelly, "Synthesis of Azacridone A." *Org. Lett.* 2004, 6, 3869-3871.
- I. Cornella and T. R. Kelly, "Synthesis of Porritoxin," *J. Org. Chem.* 2004, 69, 2191-2193.
- S. Hou, T. Sagara, D. Xu, T. R. Kelly and E. Ganz, "Investigation of Triptycene-Based Surface-Mounted Rotors." *Nanotechnology* 2003, 14, 566-570.
- J.M. Beierle, E. B. Osimboni, C. Metallinos, Y. Zhao and T. R. Kelly, "Synthesis of Louisianin C." *J. Org. Chem.* 2003, 68, 4970-4972.
- T.R. Kelly and R. L. Lebedev, "Synthesis of Some Unsymmetrical Bridged Terpyridines." *J. Org. Chem.* 2002, 67, 2197-2205.

T.R. Kelly and M. Cavero, "Selective Monoacylation of a Diamine Using Intramolecular Delivery by a DMAP Unit." *Org. Lett.* 2002, 4, 2653-2656.

T.R. Kelly, D. Xu, G. Martinez and H. Wang, "Short Synthesis of the CDEF Ring System of Lactonamycin." *Org. Lett.* 2002, 4, 1527-1529.

J.P. Sestelo and T. R. Kelly, "A Prototype of a Rationally Designed, Chemically Powered Brownian Motor." (invited paper) *Appl. Phys. A*, 2002, 75, 337-343.

T.R. Kelly, M. Cavero and Y. Zhao, "Facile Metal-Assisted Hydrolysis of a Urethane." *Org. Lett.* 2001, 3, 3895-3898.

T.R. Kelly and J.P. Sestelo. "Rotary Motion in Single-Molecule Machines." (invited paper) *Structure and Bonding*, 2001, 99, 19-53.

T.R. Kelly. "Progress Towards a Rationally Designed Molecular Motor." (invited paper), *Acc. Chem. Res.*, 2001, 31, 514-522.

T.R. Kelly, Y. Zhao, M. Cavero, and M. Torneiro. "Synthesis of the Potent Antimalarials Calothrixin A and B." *Org. Lett.* 2000, 2, 3735-3737.

T.R. Kelly, R.A. Silva, G. Finkenbeiner. "A Microcell for ReactIR." *Tetrahedron Lett.* 2000, 41, 9651-9654.

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T.R. Kelly, Y. Fu, J.T. Sieglens, Jr., and H. De Silva. "Synthesis of an Orange Anthrathiophene Pigment Isolated from a Japanese Bryozoan." *Org. Lett.* 2000, 2, 2351-2352.

T.R. Kelly, H. De Silva and R.A. Silva, "Unidirectional rotary motion in a molecular system," *Nature*. 1999, 400, 150-152.

T.R. Kelly, S. Chamberland and R.A. Silva, "Synthesis of Luotonin A," *Tetrahedron Lett.* 1999, 40, 2723.

G. Bringmann, M. Wenzel, T.R. Kelly, M.R. Boyd, R.J. Gulakowski and R. Kaminsky, "Synthesis of Octadehydromichellamine, a Structural Analog of Anti-HIV Michellamines Without Centrochirality," *Tetrahedron*. 1999, 55, 1731.

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G. Bringmann, R. Gtz, P.A. Keller, R. Walter, M.R. Boyd, F. Lang, A. Garcia, J. J. Walsh, I. Tellitu, K.V. Bhaskar, and T.R. Kelly, "A Convergent Total Synthesis of the Michellamines," *J. Org. Chem.* 1998, 63, 1090.

T.R. Kelly, I. Tellitu and J.P. Sestelo, "In Search of Molecular Ratchets," *Angew. Chem. Int. Ed. Engl.* 1997, 36, 1866; *Angew. Chem.* 1997, 109, 1969.

T.R. Kelly, Y.-J. Lee and R.J. Mears, "Synthesis of Cyclo- 2,2':4',4'':2''',2''':4''',4''':2''''',2''''':4''''',4-sexipyridine," *J. Org. Chem.* 1997, 62, 2774.

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T.R. Kelly, "A Simple, Colorful Demonstration of Solubility and Acid/Base Extraction Using a Separatory Funnel," *J. Chem. Education.* 1993, 70, 848. (The journal's cover illustration is drawn from this article.)

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M. Koyama, T.R. Kelly and K.A. Watanabe, "Novel Type of Potential Anticancer Agents Derived from Chrysophanol and Emodin. Some Structure-Activity Relationship Studies," *J. Med. Chem.* 1988, 31, 283.

T.R. Kelly and M.P. Maguire, "A Receptor for the Oriented Binding of Uric Acid Type Molecules," *J. Am. Chem. Soc.* 1987, 109, 6549.

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T.R. Kelly, L. Ananthasubramanian, K. Borah, J.W. Gillard, R.N. Goerner, Jr., P.F. King, J.N. Lyding, W.-G. Tsang and J. Vaya, "An Efficient, Regiospecific Synthesis of ( $\pm$ )-Daunomycinone," *Tetrahedron Symposium in Print #17, Tetrahedron*, 1984, 40, 4569.

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