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Professor R. Graham Cooks: Curriculum Vitae

Birthdate

July 2, 1941

Education

B.S. University of Natal, South Africa 1961
Ph.D. University of Natal, South Africa 1965
(Advisor: Frank L. Warren)
Ph.D. Cambridge University, Great Britain 1967
(Advisor: Peter Sykes)

Professional Experience and Visiting Positions

Post-doctoral Fellow, Cambridge University 1967–1968 (Advisor: Dudley H. Williams)
Assistant Professor, Chemistry Dept., Kansas State Univ. 1968–1971
Co-Director of Mass Spectrometry Center, Purdue Univ. 1971–1973
Director of Mass Spectrometry Center, Purdue University 1973–1986
Associate Professor of Chemistry, Purdue University 1975–1979
Professor of Chemistry, Purdue University 1980–present
Fulbright Senior Fellow, University of Warwick 1981
Adjunct Professor, Beijing Institute of Technology 1987–present
Head, Analytical Division, Purdue University 1989–1996
Henry Bohn Hass Distinguished Professor of Chemistry, Purdue University 1990–present

Honors

Elsie Ballot Scholar, Cambridge University 1965–1967
Fulbright Senior Fellow, University of Warwick 1981
Listed as one of the 4 most-cited Analytical Chemists (Current Contents 1983) 1983
Indiana Lions Club Purdue Cancer Research Award 1983
American Chemical Society, Analytical Division, Chemical Instrumentation Award, 1984
Thomson Medal for International Service to Mass Spectrometry 1985
Purdue Sigma Xi Faculty Research Award 1986
Honorary Member of Chinese Mass Spectrometry Society 1987
Herbert Newby McCoy Award 1990
Frank H. Field & Joe L. Franklin Award, (ACS Award for Mass Spectrometry) 1991
Fisher Award (ACS Award for Analytical Chemistry) 1997
D. Sc. (Honoris causa), University of Natal, 1999
Honorary Life Member, British Mass Spectrometry Society, 1999
Pittsburgh Spectroscopy Award, Spectroscopy Society of Pittsburgh, PITTCON, 2000
Listed amongst 100 highly-cited chemists, ISI Institute
Association for Laboratory Automation, 2000 ALA Achievement Award, 2000

Lectureships and Special Lectures

Distinguished Lecturer, Montana State University 1982

- Distinguished Speaker Series, University of Utah 1982
- Plenary Lecturer, FDA Symposium on Analytical Methodology 1982
- Plenary Lecturer, La Spettrometria di Massa in Chimica Organica, Farmaceutica e Biologica, Italian Chemical Society, Messina, Sicily 1983
- Plenary Lecturer, Triennial Exxon Worldwide MS Symposium East Brunswick, NJ 1983
- Plenary Lecturer, Annual Conference, American Society for Pharmacognosy, University of Mississippi, Oxford, MS, 1983
- Special Lecturer, University Della Calabria, Italy 1983
- Plenary Lecturer, Annual Conference, SGMS-GAMS, Lausanne, Switzerland 1984
- Plenary Lecturer, Annual Conference, British Society for Mass Spectrometry 1984
- Boomer Lecturer, University of Alberta 1984
- Distinguished Lecturer, Frontiers in Chemical Research Texas A&M University 1984
- Plenary Lecturer, 1st International Beijing Conference and Exhibition on Instrumental Analysis, Beijing, China 1985
- Plenary Lecturer, Annual Conference, ACFAS, Chicoutimi, Quebec, Canada 1985
- Plenary Lecturer, Mass Spectrometry Conference, Gesellschaft fur Biotechnologische Forschung, Braunschweig, Germany 1985
- Plenary Lecturer, Incontro di Spettrometria di Massa, CNR, Padova, Italy 1985
- Special Lecturer, Elving Memorial Symposium, University of Michigan, Ann Arbor 1985
- Visiting Lecturer, University of Campinas, Brazil 1986
- Plenary Lecturer, Triennial Exxon Worldwide MS Symposium, East Brunswick, NJ 1986
- Plenary Lecturer, International Workshop on Ion/Molecule Reactions in Applied Mass Spectrometry, Societe Francaise de Spectrometrie de Masse, Versailles, France 1986
- Plenary Lecturer, Annual Conference, Societe Francaise Mass Spectrometrie, Grenoble, France 1986
- Plenary Lecturer, Encontro Latino-Americano de Espectrometria de Masses, Rio de Janeiro, Brazil 1986
- Plenary Lecturer, Asilomar Conference on Mass Spectrometry Asilomar, CA 1986
- Special Invited Lecturer, 10th International Conference on Accelerator Mass Spectrometry, Ontario-on-the-Lake Canada 1987
- Special Lecturer and Installation as Honorary Head, Mass Spectrometry Laboratory, Beijing Institute of Technology, Beijing, China 1987
- Visiting Lecturer, Josef Stefan Institute, Ljubljana, Yugoslavia 1987
- Plenary Lecturer, Incontro di Spettrometria di Massa CNR, Padova, Italy 1987
- Plenary Lecturer, 3rd Workshop on Biomedical and Environmental Mass Spectrometry, Italian Chemical Society, Laghi di Sibara, Italy 1987
- Plenary Lecturer, 13th International Symposium on Chirality, Orlando, FL July 17 2001
- Plenary Lecturer, Ninth International Beijing Conference and Exhibition on Instrumental Analysis, Beijing, October 17, 2001
- Plenary Lecturer, Incontro di Spettrometria di Massa CNR, Padova, Italy 1988
- Summer Lecturer, Dept of Chemistry, University of Colorado 1988
- Plenary Lecturer, Biennial Conference, Australian/New Zealand Society for Mass Spectrometry, Brisbane, Australia 1988
- Plenary Lecturer, 36th ASMS Conference on Mass Spectrometry and Allied Topics, San Francisco, CA 1988
- Plenary Lecturer, 4th National Symposium on Mass Spectrometry, Indian Society for Mass Spectrometry, Bangalore, India 1988
- Plenary Lecturer, 11th International Triennial Conference on Mass Spectrometry, Bordeaux, France 1988
- J.J. Neckers Lecturer, Hope College, Holland, MI 1989
- Procter & Gamble Lecturer in Surface Science, University of Cincinnati, Cincinnati, OH 1989
- Frontiers in Chemistry Lecturer, Case Western Reserve University, Cleveland, OH 1989
- Plenary Lecturer, International Symposium on Applied Mass Spectrometry in the Health Sciences, Barcelona, Spain 1990
- McCoy Distinguished Lecturer, Purdue University, West Lafayette, IN 1990

Plenary Lecturer, European Meeting on Tandem Mass Spectrometry, University of Manchester Inst. of Science and Technology, Manchester, United Kingdom 1990

Roland Frei Memorial Lecturer, 7th Montreux Symposium on Hyphenated Techniques, Montreux, Switzerland, International Association of Environmental Analytical Chemistry 1990

Barnett Lecturer, Northeastern University, Boston 1991

Plenary Lecturer, 12th International Mass Spectrometry Conference, Amsterdam, The Netherlands 1991

Willard Lecturer, University of Michigan 1991

Plenary Lecturer, Applied Biosystems, Indianapolis 1991

Plenary Lecturer, Symposium on Analytical Chemistry, Kemidagarna Finnish Chemical Congress, Helsinki, Finland 1991

Plenary Lecturer, University of Oulu, Sweden 1991

Ridder Lecturer, University of Miami, Oxford, OH 1992

Clark Lecturer, West Virginia University, Morgantown 1992

Plenary Lecturer, Korean Mass Spectrometry Society Meeting, Seoul, Korea 1992

Plenary Lecturer, 9th International Conference on Methods in Protein Sequence Analysis, Otsu, Japan 1992

Plenary Lecturer, International Conference on Biological Mass Spectrometry, Kyoto, Japan 1992

Plenary Lecturer, Science Innovation '93, Boston, Massachusetts 1993

Fassel Lecturer, Iowa State University, Ames, Iowa 1993

Keynote Lecturer, International Mass Spectrometry Conference, Budapest, Hungary 1994

W.J. Chute Lecturer, Dalhousie University, Halifax, Nova Scotia, Canada 1994

Plenary Lecturer, American Society for Mass Spectrometry, Atlanta, Georgia 1995

Plenary Lecturer, International Mass Spectrometry Conference, Tampere, Finland 1997

Fisher Award Lecture, American Chemical Society, San Francisco, CA, April 14, 1997

John van Geuns Lecture, University of Amsterdam,

May 12, 1998

Inaugural Gill Lecture, Indiana University, Bloomington, January 29, 1999

Wolfgang Paul Lecture, German Mass Spectrometry Society, Oldenburg, May 25th, 1999

Plenary Lecture, British Mass Spectrometry Society, Reading, September 13, 1999

Bayer Award Lecture, University of New Hampshire, Dover, October 14, 1999

Davis Memorial Lecture, University of New Orleans, March 10, 2000

Pittsburgh Spectroscopy Award Lecture, New Orleans, March 14, 2000

Plenary Lecturer, Italian Mass Spectrometry Society, Rimini, Italy, June 7 2000

American Laboratory Automation Award lecture, San Diego, July 12, 2000

Raymond S. Vogel Memorial Lecture, Urbana-Champaign, IL, November 1, 2000

Professional Memberships

American Association for the Advancement of Science

American Society for Mass Spectrometry—Past Vice President for Programs/President

American Chemical Society

Sigma Xi

Chinese Mass Spectrometry Society

International Mass Spectrometry Society—Past President

Publications

- [1] J.H. Bowie, R.G. Cooks, J.W. Fisher, T.McL. Spotswood, Skeletal rearrangement fragments in the mass spectra of anils, *Austral. J. Chem.* 21 (1968) 2021.
- [2] R.G. Cooks, F.L. Warren, D.H. Williams, Rhizophoraceae alkaloids. Part III. Cassipourine, *J. Chem. Soc. (C)* (1967) 286.
- [3] D.H. Williams, R.G. Cooks, I. Howe, A comparison of reaction rates in common ions generated via fragmentation and direct ionization, *J. Am. Chem. Soc.* 90 (1968) 6759.
- [4] R.G. Cooks, D.H. Williams, The relative rates for fragmen-

- tation of benzoyl ions generated upon electron impact for different precursors, *Chem. Commun.* (1968) 627.
- [5] E. Dynesen, S.-O. Lawesson, G. Schroll, J.H. Bowie, R.G. Cooks, Mass spectra of substituted 9,10-dihydrophenanthrenes, *Arkiv. Kemi.* 26 (1967) 379.
- [6] J.H. Bowie, R.G. Cooks, S.-O. Lawesson, C. Nolde, Mass spectra of substituted thiophenes, *J. Chem. Soc. (B)* (1967) 616.
- [7] J.H. Bowie, R.G. Cooks, P. Jakobsen, S.-O. Lawesson, G. Schroll, Mass spectra of esters and thioesters, *Austral. J. Chem.* 20 (1967) 689.
- [8] J.H. Bowie, G.E. Lewis, R.G. Cooks, Skeletal rearrangement processes of aromatic azoxy-compounds on electron impact, *Chem. Commun.* (1967) 284.
- [9] J.H. Bowie, R.G. Cooks, G.E. Lewis, Mass spectra of substituted azobenzenes. Aryl migration on electron impact, *J. Chem. Soc. (B)* (1967) 621.
- [10] J.H. Bowie, S.-O. Lawesson, R. Duus, P. Madsen, R.G. Cooks, Skeletal rearrangement of mercapto esters upon electron impact, *Chem. Commun.* (1967) 346.
- [11] J.H. Bowie, R.G. Cooks, R.H. Prager, H.M. Thredhold, The mass spectra of acridones, *Austral. J. Chem.* 20 (1967) 1179.
- [12] J.H. Bowie, R.G. Cooks, G.E. Lewis, Mass spectra of aromatic azoxy compounds. Skeletal rearrangement upon electron impact, *Austral. J. Chem.* 20 (1967) 1601.
- [13] J.H. Bowie, R.G. Cooks, S.-O. Lawesson, G. Schroll, Mass spectra of substituted imidazoles, *Austral. J. Chem.* 20 (1967) 1615.
- [14] J.H. Bowie, R.G. Cooks, N.C. Jamieson, G.E. Lewis, Skeletal rearrangement fragments in the mass spectra of aromatic *N*-oxides, *Austral. J. Chem.* 20 (1967) 2545.
- [15] J.H. Bowie, F.C.V. Larsson, G. Schroll, S.-O. Lawesson, R.G. Cooks, Mass spectra of arylsulphonylamines, *Tetrahedron* 23 (1967) 3743.
- [16] F. Duus, S.-O. Lawesson, G. Schroll, J.H. Bowie, R.G. Cooks, Skeletal rearrangement processes of organic sulphur compounds on electron impact, *Chem. Commun.* (1967) 697.
- [17] R.G. Cooks, R.S. Ward, D.H. Williams, Random and non-random decomposition modes induced by electron impact in benzonitrile, *Chem. Commun.* (1967) 850.
- [18] R.G. Cooks, J. Ronayne, D.H. Williams, Migrations to carbonium ion centers generated upon electron impact, *J. Chem. Soc. C* (1967) 2601.
- [19] G. Schroll, R.G. Cooks, R. Klemmensen, S.-O. Lawesson, The mass spectra of nitroso compounds, *Arkiv. Kemi.* 28 (1968) 413.
- [20] C. Nolde, S.-O. Lawesson, J.H. Bowie, R.G. Cooks, The mass spectra of substituted imides. Skeletal rearrangement on electron impact, *Tetrahedron* 24 (1968) 1051.
- [21] J.H. Bowie, R.G. Cooks, P.F. Donaghue, J.A. Halleday, H.J. Rodda, Mass spectra of pyridazines, phthalazines and related compounds, *Austral. J. Chem.* 21 (1968) 2677.
- [22] F. Duus, P. Madsen, S.-O. Lawesson, J.H. Bowie, R.G. Cooks, Mass spectra of \bullet - and \bullet -mercaptoesters. Skeletal rearrangement upon electron impact, *Arkiv. Kemi.* 28 (1968) 423.
- [23] E. Dynesen, S.-O. Lawesson, G. Schroll, J.H. Bowie, R.G. Cooks, The mass spectra of sulphonamides and sulphonyl chlorides. The formation of C–O and C–N bonds upon electron impact, *J. Chem. Soc. B* (1968) 15.
- [24] S.-O. Lawesson, G. Schroll, J.H. Bowie, R.G. Cooks, The mass spectra of substituted benzimidazoles, *Tetrahedron* 24 (1968) 1875.
- [25] S.-O. Lawesson, J.H. Bowie, R.G. Cooks, Mass spectra of \bullet -thioxo esters, *Arkiv. Kemi.* 29 (1968) 191.
- [26] R.G. Cooks, R.S. Ward, M.A. Shaw, J.C. Tebby, D.H. Williams, The decomposition of some stable alkylidene-phenylphosphoranes upon electron impact. Reactions occurring with and without deuterium/hydrogen scrambling in labeled phenyl rings, *Tetrahedron* 24 (1968) 3289.
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- [29] D.H. Williams, S.W. Tam, R.G. Cooks, Hydrogen scrambling in some $C_6H_5X^+$ and $C_6H_5^+$ ions generated upon electron impact, *J. Am. Chem. Soc.* 90 (1968) 2150.
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- [31] D.H. Williams, R.G. Cooks, J. Ronayne, S.W. Tam, The decomposition of furan, thiophene and deuterated analogues upon electron impact, *Tetrahedron Lett.* (1968) 1977.
- [32] D.H. Williams, R.S. Ward, R.G. Cooks, A study of the reactions induced in triphenylphosphine, triphenylphosphine oxide and related substances upon electron impact, *J. Am. Chem. Soc.* 90 (1968) 966.
- [33] D.H. Williams, R.S. Ward, R.G. Cooks, Hydrogen scrambling between phenyl rings of benzhydrol and diphenylmethyl chloride, *J. Chem. Soc. B* (1968) 522.
- [34] R.G. Cooks, I. Howe, S.W. Tam, D.H. Williams, Hydrogen scrambling in some bicyclic aromatic systems. Randomization over two rings, *J. Am. Chem. Soc.* 90 (1968) 4064.
- [35] R.S. Larsen, G. Schroll, S.-O. Lawesson, J.H. Bowie, R.G. Cooks, The mass spectra of nitrones. C–O bond formation upon electron impact, *Tetrahedron* 24 (1968) 5193.
- [36] R.G. Cooks, A.G. Gerrard, Electron impact-induced rearrangements in compounds having the P=S bond, *J. Chem. Soc. B* (1968) 1327.
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- [39] D.H. Williams, R.G. Cooks, I. Howe, A comparison of reaction rates in common ions generated via fragmentation and direct ionization, *J. Am. Chem. Soc.* 90 (1968) 6759.
- [40] R.G. Cooks, D.H. Williams, The relative rates for fragmentation of benzoyl ions generated upon electron impact for different precursors, *Chem. Commun.* (1968) 627.
- [41] J.O. Madsen, S.-O. Lawesson, J.H. Bowie, R.G. Cooks,

- Skeletal rearrangement fragments in the mass spectra of substituted thioglycolic acids and esters, *Chem. Commun.* (1968) 698.
- [42] D.H. Williams, R.G. Cooks, The role of 'frequency factors' in determining the difference between low and high voltage mass spectra, *Chem. Commun.* (1968) 663.
- [43] R.G. Cooks, S.W. Tam, Bond-forming reactions occurring in azines upon electron impact, *Org. Mass Spectrom.* 1 (1968) 583.
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- [45] R.G. Cooks, P. Sykes, The reactions with amines of disulphides derived from thiazolium salts. Part II. Tertiary and aromatic amines and the thiolation reaction, *J. Chem. Soc. C* (1968) 2871.
- [46] R.G. Cooks, R.S. Ward, I. Howe, D.H. Williams, Substituent effects in mass spectrometry, *Chem. Commun.* (1968) 837.
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- [48] A.N.H. Yeo, R.G. Cooks, D.H. Williams, The question of hydrogen randomization in phenyl isocyanide, *Org. Mass Spectrom.* 1 (1968) 910.
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- [51] J.H. Bowie, J.O. Madsen, S.-O. Lawesson, R.G. Cooks, Mass spectra of substituted thioglycolic acids and esters. Skeletal rearrangement upon electron-impact, *Org. Mass Spectrom.* 2 (1969) 413.
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- [53] R.S. Ward, R.G. Cooks, D.H. Williams, Substituent effects in mass spectrometry. Mass spectra of substituted phenyl benzyl ethers, *J. Am. Chem. Soc.* 91 (1969) 2727.
- [54] R.G. Cooks, I. Howe, D.H. Williams, Structure and fragmentation mechanisms of organic ions in the mass spectrometer, *Org. Mass Spectrom.* 2 (1969) 137.
- [55] R.G. Cooks, Bond formation upon electron impact, *Org. Mass Spectrom.* 2 (1969) 481.
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- doubly-charged ion reactions in toluene, *Org. Mass Spectrom.* 6 (1972) 741.
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- [81] M. Bertrand, J.H. Beynon, R.G. Cooks, Isotope effects upon kinetic energy release in metastable ion fragmentations, *Int. J. Mass Spectrom. Ion Phys.* 9 (1972) 346.
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