

MARK LAUTENS, O.C., FRSC, D.Sc. h.c.

University Professor
J. Bryan Jones Distinguished Professor
AstraZeneca Professor of Organic Synthesis
Fellow of Trinity College, University of Toronto
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PERSONAL

Place and Date of Birth: Hamilton, Ontario CANADA, July 9, 1959

EDUCATION

Harvard University	PDF with D.A. Evans	1985-1987
U. Wisconsin-Madison	Ph.D. with B.M. Trost	1985
U. Guelph	B.Sc.-Distinction	1981

ACADEMIC POSITIONS

J. Bryan Jones Distinguished Professor	University of Toronto	2013-2018
University Professor (top 2% of faculty)	University of Toronto	2012-present
Merck Frosst/NSERC Industrial Research Chair	University of Toronto	2003-2013
AstraZeneca Professor of Organic Synthesis	University of Toronto	1998-present
Professor	University of Toronto	1995-1998
Associate Professor	University of Toronto	1992-1995
Assistant Professor	University of Toronto	1987-1992

HONORS

Doctor of Science, <i>honoris causa</i>	University of Guelph	2016
Officer of the Order of Canada, O.C.	Governor General of Canada	2014
Fellow of the Royal Society of Chemistry (UK)	RSC	2011
Fellow of the Royal Society of Canada	RSC	2001

AWARDS

UofT Alumni Faculty Award	University of Toronto	2016
CIC Catalysis Award	Chemical Institute of Canada	2016
CIC Medal	Chemical Institute of Canada	2013

Pedler Award	Royal Society of Chemistry	2011
Killam Research Fellowship	Canada Council	2013-2015
Alexander von Humboldt Awardee	Humboldt Foundation	2009-2015
A. C. Cope Scholar	American Chemical Society	2006
Alfred Bader Award	Canadian Society for Chemistry	2006
R. U. Lemieux Award	Canadian Society for Chemistry	2004
Solvias Ligand Contest Winner	Solvias AG	2002
Novartis Chemistry Lecturer	USA, Japan, Europe	1999
E.W.R. Steacie Fellow	NSERC (Canada)	1994-1996
Rutherford Memorial Medal	Royal Society of Canada	1994
NSERC/JSPS Bilateral Exchange	University of Tokyo	1994
CSC/Merck Frosst Lecture Award	Chemical Institute of Canada	1994
Eli Lilly Grantee	University of Toronto	1992-1994
Alfred P. Sloan Fellow	University of Toronto	1991-1995
1st BioMega Young Investigator	University of Toronto	1990-1993
NSERC University Research Fellow	University of Toronto	1987-1997
NSERC Postdoctoral Fellowship	Harvard University	1985-1987
Sigma Xi Research Award	U. Wisconsin-Madison	1985
NSERC Postgraduate Scholarship	U. Wisconsin-Madison	1981-1985
Chemical Institute of Canada Medal	U. Guelph	1980

VISITING PROFESSORSHIPS

ESPCI Visiting Professor	ESPCI Paris	2016
Nanyang Visiting Professor	NTU, Singapore	2014
ICIQ Summer School	ICIQ Tarragona, Spain	2008
Invited Visiting Professor	University of Marseilles	2008
Attilio Corbella Summer School Professor	Italian Chemical Society	2007
Visiting Professor, Santiago de Compostela	Spain	2006
100 Memorial Fund Visiting Professor	Tokyo Institute of Technology	2004
Guest Professor of the Max Planck Society	MPI Mülheim	1997
Troisième Cycle Visiting Professorship	University of Geneva	1996
D.A.A.D. Visiting Research Fellowship	University of Marburg	1996
Catalan Visiting Professorship	University of Barcelona	1996
Professeur Associé	Université Paris VI	1993

EDITORIAL RESPONSIBILITIES

Founding Editor for *Synfacts* published by Georg Thieme Verlag, Stuttgart
 Editor for the Americas for *Synthesis* published by Georg Thieme Verlag, Stuttgart
 Advisory Board, Organic Synthesis Inc. , 2013-present.
 Board of Editors, Organic Synthesis Inc.TM 2004-2012.
 Editor of *Science of Synthesis* Vol. 1 "Transition Metal-Carbon Pi Bonds of Groups 10-8"
 Royal Society of Chemistry, Member of International Advisory Board 1990-2000.

RESEARCH TRAINING

1985-1987: Approach to the Total Synthesis of Bryostatin (D.A. Evans, Harvard University)

1981-1985: Molybdenum(0) Catalyzed Reactions of Allylic Acetates. Palladium(II) Catalyzed Cyclizations of 1,6-Enynes. (B.M. Trost, U. Wisconsin-Madison)

January 1981-June 1981: Mechanism of the Pd(II) Catalyzed Oxidation of Allyl Alcohol. (P.M. Henry, U. Guelph)

May 1980-September 1980: Synthesis of Coloured Liquid Crystals. (P. Kazmaier, T. Martin, Xerox Research Centre)

May 1979-May 1980: A Photochemical-Thermolysis Sequence as a Route to Medium Ring Sesquiterpenoids. (G.L. Lange, U. Guelph)

RESEARCH INTERESTS

- multi-metal multi-component reactions for sustainable synthesis
- carbohalogenation via reversible oxidative addition
- new routes to medicinally interesting agents
- heterocyclic synthesis using metal catalysts
- new synthetic methods
- asymmetric catalysis with a focus on nickel, palladium and rhodium catalysts
- natural product synthesis
- new strategies to biologically active compounds
- metal catalyzed cycloaddition and annulation reactions
- fragmentation reactions
- cyclopropane synthesis and reactions
- hydrometallation reactions
- reactions of organosilicon and organotin compounds

SUMMARY OF PROFESSIONAL ACTIVITY

- 410 lectures presented at conferences, universities and to industry
- 345 publications
- presentation of "short courses" at universities or to industry (10 to date)

SUMMARY OF FUNDING SOURCES (1987-2016)

- Natural Sciences and Engineering Research Council of Canada (currently held)
- Alphora Research Inc. (currently held)
- Distinguished Professorship Fund, University of Toronto (currently held)
- Merck Inc.
- Otsuka Pharmaceutical Co. Ltd.
- Daiichi Pharmaceutical Co. Ltd.
- AstraZeneca Research Centre Montreal
- ORDCF Challenge Fund
- Tanabe Japan
- BioChem Pharma
- Upjohn/Pharmacia Inc
- E.W.R. Steacie Foundation
- A.P. Sloan Foundation
- BioMega/Boehringer Ingelheim Canada
- Eli Lilly Grantee
- Allelix Biopharmaceuticals
- Canadian Aids Research Foundation
- J.P. Bickell Foundation
- Petroleum Research Foundation
- Connaught Foundation, University of Toronto
- Ontario Centre for Materials Research
- Mitsubishi Petrochemicals
- Timminco Metals

TEACHING RESPONSIBILITIES

Undergraduate Courses

Synthesis of Modern Pharmaceutical Agents	CHM440	2012
Synthesis of Modern Pharmaceutical Agents	CHM440	2011
Synthesis of Modern Pharmaceutical Agents	CHM440	2010
Organic Chemistry	CHM249	2009
Modern Organic Chemistry	CHM342	2008

Modern Organic Chemistry	CHM345	2007
Modern Organic Chemistry	CHM345	2006
Organic Chemistry	CHM247	2005
Organic Chemistry	CHM247	2004
Synthesis of Modern Pharmaceutical Agents	CHM440	2002
Synthesis of Modern Pharmaceutical Agents	CHM440	2001
Organic Chemistry I (with A. Yudin)	CHM248	2001
Synthesis of Modern Pharmaceutical Agents	CHM440	2000
Organic Chemistry I (with A. Yudin)	CHM248	2000
Synthesis of Modern Pharmaceutical Agents	CHM440	1999
Organic Chemistry I (with A. Yudin)	CHM248	1999
Synthesis of Modern Pharmaceutical Agents	CHM440	1998***
Organic Chemistry I (with A. Yudin)	CHM248	1998**
Organic Chemistry I	CHM248	1997/98
Organic Chemistry I (with J.B. Jones)	CHM248	1996
Advanced Organic Chemistry	CHM440	1994
Intermediate Organic Chemistry (with J. Bunting)	CHM349	1994*,**
Advanced Organic Chemistry	CHM440	1993
Intermediate Organic Chemistry (with J. Bunting)	CHM349	1993*,**
Advanced Organic Chemistry	CHM440	1992
Intermediate Organic Chemistry (with R. Kluger)	CHM349	1992**
Intermediate Organic Chemistry (with R. Kluger)	CHM349	1991**
Intermediate Organic Chemistry (with R. Kluger)	CHM349	1990
Intermediate Organic Chemistry (with R. Kluger)	CHM349	1989
Introductory Organic Chemistry	CHM240	1988
Introductory Organic Chemistry	CHM240	1988

* Due to changes in the undergraduate curriculum, CHM349 was a new course in 1989. I selected the material to be covered in one half of the course.

** Course spokesman.

*** A new course in 1998 replacing Advanced Synthetic Organic Chemistry.

Graduate Courses

Special Topics in Organic Chemistry (with M. Taylor, N. Cramer)	CHM1060	2013
Special Topics in Organic Chemistry (with M. Taylor)	CHM1057	2011
Special Topics in Organic Chemistry (with M. Taylor, L. Gossen)	CHM1057	2008
Special Topics in Organic Synthesis (with R.A Batey, V. Dong)	CHM1060	2007
Special Topics in Organic Synthesis (with R.A Batey, A. Yudin)	CHM1057	2006
Modern Organic Synthesis (with R.A. Batey)	CHM1040	2001
Modern Organic Synthesis (with I.W.J. Still)	CHM1040	1999
Asymmetric Catalysis (with J.B. Jones)	CHM1080	1996
Medicinal Chemistry Graduate Course (with S. Rakhit)	CHM1068	1995**
Asymmetric Catalysis (with J.B. Jones)	CHM1080	1994**

Modern Organic Synthesis (with I.W.J. Still)	CHM1040	1993
Organic Chemistry of the Metalloids (with R. Friesen)	CHM1073	1991
Modern Organic Synthesis (with R. Friesen)	CHM1040	1991*,**
Topics in Synthetic Organic Chemistry (with P. Yates, S. McLean)	CHM1057	1989
Organic Chemistry of the Metalloids (with A.G. Brook)	CHM1073	1987

* As the organic representative on the graduate studies committee, I instituted "core" graduate courses. Professor Friesen and I designed the "core" course in organic synthesis and taught it for the first time in 1991.

** A new course taught for the first time.

OTHER SCHOLARLY ACTIVITIES

14. Editor for the newly launched journal *Synfacts*, 2005-present.
13. Member of the Board of Editors, Organic Synthesis Inc.TM 2004-2012
12. Chair OMCOS-12, (Organometallic Chemistry in Organic Synthesis), Toronto 2003.
11. Consultant for Merck Frosst and Merck Inc., 1998-2008.
10. Editor for the "Americas" for the journal *Synthesis*, 1999-present.
9. Consultant for Astra and Astra Research Centre Montreal, 1998-2000.
8. Consultant for BioChem Pharma, 1998-2000
7. Area Coordinator for Organic Chemistry, Pacificchem 2000, Hawaii.
6. Organic Division Treasurer and Conference Organizer, CSC Toronto, 1999.
5. Co-organized the 1st Canadian Symposium on Combinatorial Chemistry, Toronto 1995.
4. Co-organized 5th Quebec/Ontario Minisymposium in Organic Chemistry, Toronto, 1994.
3. Organizer of 2nd Canadian Workshop in Organic Synthesis, Sherbrooke, P.Q. 1993.
2. Organized a Symposium on "Organometallics in Organic Synthesis" at 74th CIC, Hamilton, 1991.
1. Initiated and co-organized 1st Quebec/Ontario Minisymposium in Organic Chemistry, Toronto, 1990.

ADDITIONAL CONTRIBUTIONS RELATING TO GRADUATE EDUCATION

1. MERCK FROSST LECTURESHIP (1990-2010)

I obtained a continuing yearly commitment from Merck Frosst to fund a lectureship in organic chemistry. Our lecturers have included Professor K.C. Nicolaou (1990), R. Noyori (1991), N. Porter (1992) D.A. Evans (1994), S.V. Ley (1995), P. Knochel (1996), D. Curran (1997), J.F. Normant (1998), A. Fürstner (1999), C. Bolm (2000), P. Kocienski (2001), J. Brown (2002), M. Beller (2002), Richard Larock (2004), C. Gennari (2006), P. Baran (2007).

2. BIOMEGA/BOEHRINGER INGELHEIM GRADUATE AWARD

I obtained a continuing yearly commitment from BioMega to fund an award to be given to a third or fourth year student in organic chemistry for excellence in research during his or her graduate career. I have recently obtained sufficient funds from BioMega to create an endowed graduate student award. Dr. S. Taylor (R.H. Kluger supervisor) and Dr. L. Edwards (M. Lautens supervisor) and Dr. Pauline Chiu (M. Lautens supervisor), Dr. J. Wodzinska (R.H. Kluger supervisor), Dr. P. Delanghe (M. Lautens supervisor), Dr. Yi Ren (M. Lautens supervisor), T. Rovis (M. Lautens supervisor), E. Fillion (M. Lautens supervisor) and W. Huang (T. Tidwell supervisor), A. Thadani (R. Batey supervisor), G. Hughes (M. Lautens supervisor), K. Fagnou (M. Lautens supervisor), M. Maddess (M. Lautens supervisor), Eric Fang (M. Lautens supervisor), Mark Scott (M. Lautens supervisor) Brian Mariampillai (M. Lautens supervisor) and Praew Thansandote (M. Lautens supervisor), Stephen Newman (M. Lautens supervisor), Gavin Chit Tsui (M. Lautens supervisor) David Petrone (M. Lautens supervisor) have received the award thus far.

3. **PETER YATES/FMC LECTURE (1995-present)**

Professor Ron Kluger and I obtained funding for a continuing lecture series from FMC Corporation by selling the chemical collection of Professor Peter Yates. Our lecturers have included Professor S. Danishefsky (1995), W.C. Still (1996), P. Kollman (1997) and J. Clardy (1998), Richard L. Schowen (2000), Jonathan Sessler (2001) and George Kenyon (2002). The Biological Chemistry group has taken over decisions on the lecturer for the past 8 years.

4. **BIOMEGA/BOEHRINGER INGELHEIM LECTURESHIP (1996-2010)**

I obtained a continuing yearly commitment from BioMega/Boehringer Ingelheim to fund a lectureship in organic chemistry. Thus far Professor Y. Ito (1996), S. Kobayashi (1997), E. Carreira (1998), M. Shibasaki (2000), A. Togni (2001), N. Miyura (2002), T. Fukayama (2004), M. Krische (2006), M. Banwell (2007) and many others have visited the department thanks to generous support.

5. **PFIZER SYMPOSIUM**

I obtained a continuing year commitment from Pfizer Inc. to fund a symposium in organic chemistry. The format that has evolved is to have a senior internationally recognized scholar, a young emerging scholar, a researcher from industry and one of our faculty present a lecture. We obtained 7 years of funding for this symposium.

6. **ORGANIC SYNTHESIS INC. LECTURER (2005-2013)**

I was invited to serve on the Board of Editors of Organic Synthesis Inc. and one benefit of this service is that Organic Synthesis funds a lectureship during the period you are a board member. Samir Zard was our first lecturer in 2005. Since then E. Sorensen, K. Schedit, G. Fu and F. Glorius have given lectures.

7. **NPS LECTURESHIP**

I obtained a commitment from Allelix Biopharmaceutical to fund an annual lectureship in organic chemistry. Our lecturers included Professor A.B. Smith (1997) and C.-H. Wong (1998) and after a few years hiatus Professor Sergey Kozmin (2003) reinitiated the series followed by J. Cossy (2006) and Benjamin List (2007).

8. MERCK FROSST GRADUATE SCHOLARSHIPS

I obtained funds from Merck Frosst to endow two graduate scholarships to allow a student to attend an international conference and to provide a top-up award to an entering organic graduate student.

9. MEDICINAL CHEMISTRY GRADUATE COURSE

I initiated contact with Allelix Biopharmaceuticals of Mississauga to organize a new graduate course taught by leaders in the pharmaceutical industry in the area of Drug Discovery. The course was taught for the first time in 1995S and again in 1996F.

10. ALPHORA LECTURESHIP (2000-present)

I obtained funding from Alphora Inc. of Mississauga for an annual lectureship that brings in a young and promising star in chemistry to spend a day in the department. Thus far M. Movassagi, M. Gaunt, M. Rueping and L. Ackermann have given lectures,

11. MERCK FROSST VISITING PROFESSORSHIP (2003-2013)

As part of my NSERC Industrial Research Chair, I set aside annual funding to bring a Visiting Professor to our department to give an advanced topics graduate course. We have successfully recruited visitors from the UK, Ireland, Germany and Australia.

12. PHARMARON LECTURESHIP (2014-present)

I obtained funding from Pharmaron to bring in an international speaker. Our first speaker was Frank Glorius, Muenster followed by Jan Backvall, Stockholm.

DEPARTMENTAL COMMITTEE WORK

Chair

New Faculty Search Committee	2013-2014
New Faculty Search Committee	2000-2001
New Faculty Search Committee	1996-1998
New Faculty Search Committee	1995-1996
New Faculty Search Committee	1993-1994
Graduate Recruiting Committee	1993-1994

Stockroom and Stores Committee	1989-1993
Member	
New Faculty Search Committee	1999-2000, 2001-2006
Departmental Complement Committee	1999-present
Seminar Committee, Organic Division	1999-2001
Astra Biotechnology Chair Search	1998
Tenure Review Committee	1998-1999
Graduate Recruiting Committee	1997-1998
Chair's Departmental Advisory Committee	1993-present
Graduate Studies Committee	1993-1997
Undergraduate Studies Committee	1994-1995
Graduate Recruiting Committee	1994-1995
Facilities Committee (NMR, X-ray, MS)	1993-present
Faculty Search Committee (2 positions)	1992-1993
Library Committee	1992-1993
X-ray Facility Committee	1991-1993
Analytical Services Committee	1990-1993
NMR Users Committee	1990-1993

UNIVERSITY COMMITTEE WORK

Member of Governing Council	2016-2021
Decanal Promotion Committee	2005, 2006
Dean of Arts and Science Search Committee	2003
Decanal Promotion Committee	2000-2002
Astra Biotechnology Junior Faculty Search	1999
Users Committee for Davenport Addition	1998-present
Connaught Committee	1997-2000
Users Committee for Harbord St. Residence	1997-1999
New Harbord St. Residence Planning Committee	1997-1998
Dean of Arts and Science Search Committee	1997
Physics Chair Search Committee	1997
Academic Board	1993-1994
Chemistry Chair Search Committee	1993

TRINITY COLLEGE COMMITTEE WORK

Senate	2005-2008
Academic Appointments Committee	2005
Admissions Committee	2003-present
Tutor Selection Committee	2001, 2003

OTHER COMMITTEE WORK

Member of a CIHR Selection Panel	2007
Chair of OGS Selection Panel	2001
Chair of OGS Selection Panel	1997-1999
Member of the OGS Selection Panel	1996-1997

OTHER SIGNIFICANT CONTRIBUTIONS

Member of the SAB, Alphora Research	2016-present
Member of the ACUIG, NSERC	2014-present
Member of SAB, SSPC Ireland	2013-present
Chair and Member RTI Panel, NSERC	2010-2013, 2015
Member Science Foundation of Ireland Grants	2006-present
Reviewer, Israel Science Foundation	2009, 2012, 2013
Reviewer, Swiss Science Foundation	2010, 2011
Reviewer, German Science Foundation	2009

MARK LAUTENS

Publications (with doctoral contributors in BOLD)

2016

350. **Le, C.M.**; Sperger, T.; Fu, R.; Hou, X.; Lim, Y.H.; Schoenebeck, F.; Lautens, M. "Stereoselective Synthesis of Methylene Oxindoles via Palladium (II) Catalysed Intramolecular Cross-Coupling of Carbamoyl Chlorides" *Journal of the American Chemical Society*, **2016**, *138*, ASAP. DOI: 10.1021/jacs.6b08925.
349. Ye, J.; Shi, Z.; Sperger, T.; Yasukawa, Y.; Kingston, C.; Schoenebeck, F.; Lautens, M. "Remote C-H Alkylation and C-C Bond Cleavage Enabled by an in-situ Generated Palladacycle" *Nature Chemistry*, DOI: 10.1038/nchem.2631.
348. Burki, C.; Whyte, A.; Arndt, S.; Hashmi, A.S.K.; Lautens, M. "Expanding the Scope of the Gold(I)-Catalyzed Rautenstrauch Rearrangement: Protic Additives" *Organic Letters*, **2016**, *18*, 5058-5061. DOI: [10.1021/acs.orglett.6b02505](https://doi.org/10.1021/acs.orglett.6b02505).
347. Lu, B.; Gao, J.-M.; Lautens, M. "Palladium-Catalyzed Norbornene-Mediated Tandem Amination/Cyanation Reaction: A Method for the Synthesis of ortho-Aminated Benzonitriles" *Organic Letters*, **2016**, *18*, 4166-4169. DOI: [10.1021/acs.orglett.6b02249](https://doi.org/10.1021/acs.orglett.6b02249).
346. Yamamoto, K.; Qureshi, Z.; Tsoung, J.; Pisella, G.; Lautens, M. "Combining Ru-Catalyzed C-H Functionalization with Pd-Catalyzed Asymmetric Allylic Alkylation: Synthesis of 3-Allyl-3-aryl Oxindole Derivatives from Aryl Alpha-Diazoamides" *Organic Letters*, **2016**, *18*, 4954-4957. DOI: 10.1021/acs.orglett.6b02423.
345. Loh, C.C.J.; Schmid, M.; **Webster, R.**; **Yen, A.**; Yazdi, S.K.; Franke, P.T.; Lautens, M. "Rhodium-Catalyzed Asymmetric Cycloisomerization and Parallel Kinetic Resolution of Racemic Oxabicycles" *Angewandte Chemie International Edition* **2016**, *55*, 10074-10078. DOI: 10.1002/anie.201604937.
344. **Qureshi, Z.**; Kim, J.Y.; Bruun, T.; Lam, H.; Lautens, M. "Cu/Pd-Catalyzed Synthesis of Fully Decorated Polycyclic Triazoles: Introducing C-H Functionalization to Multicomponent Multicatalytic Reactions ((MC)²R)" *ACS Catalysis* **2016**, *6*, 4946-4952. DOI: 10.1021/acscatal.6b00858.
343. Rebelo, J.M.; Kress, S.; Friedman, A.A.; Lautens, M. "Orthogonally Reacting Boron Coupling Reagents: A Novel Multicomponent-Multicatalytic Reaction [(MC)²R] of Dichlorovinylpyrazine" *Synthesis*, **2016**, ASAP-ASAP. DOI: 10.1055/s-0035-1561670.

342. **Petrone, D.A.**; Ye, J.; Lautens, M. “Modern Transition-Metal-Catalyzed Carbon-Halogen Bond Formation” *Chemical Reviews*, **2016**, *116*, 8003-8104. DOI:10.1021/acs.chemrev.6b00089.
341. **Johnson, T.**; Luo, B.; Lautens, M. “Palladium(II)-Catalyzed Enantioselective Synthesis of α -(Trifluoromethyl)arylmethylamines” *Journal of Organic Chemistry* **2016**, *81*, 4923-4930. DOI: 10.1021/acs.joc.6b00657.
340. Yamamoto, K.; Bruun, T.; Kim, J.Y.; **Zhang, L.**; Lautens, M. “A New Multicomponent Multicatalyst Reaction (MC)²R: Chemoselective Cycloaddition and Latent Catalyst Activation for the Synthesis of Fully Substituted 1,2,3-Triazoles” *Organic Letters*, **2016**, *18*, 2644-2647. DOI: 10.1021/acs.orglett.6b00975.
339. **Qureshi, Z.**; Toker, C.; Lautens, M. “Secondary Alkyl Groups in Palladium-Catalyzed Cross-Coupling Reactions” *Synthesis* **2016**, *48*, ASAP-ASAP. DOI: 10.1055/s-0035-1561625.
338. **Yoon, H.**; **Jang, Y.J.** Lautens, M. “Diastereoselective Pd-Catalyzed Domino Heck/Arylborylation Sequence Forming Borylated Chromans” *Synthesis* **2016**, *48*, 1483-1490. DOI: 10.1055/s-0035-1561567.
337. Loh, C.C.J.; Schmid, M.; Peters, B.; Fang, X.; Lautens, M. “Exploiting Distal Reactivity of Coumarins: A Rhodium-Catalyzed Vinylogous Asymmetric Ring-Opening Reaction” *Angewandte Chemie International Edition* **2016**, *55*, 4600-4604. DOI: 10.1002/anie.201600654.
336. **Petrone, D.A.**; Kondo, M.; **Zeidan, N.**; Lautens, M. “Pd(0) Catalyzed Dearomative Diarylation of Indoles” *Chemistry: A European Journal* **2016**, *22*, 5684-5691. DOI: 10.1002/chem.201600118.
335. Kress, S.; **Johnson, T.**; Weissnar, F.; Lautens, M. “Synthetic and Mechanistic Studies on the Rhodium-Catalyzed Redox Isomerization of Cyclohexa-2,5-dienols” *ACS Catalysis* **2016**, *6*, 747-750. DOI: 10.1021/acscatal.5b02387.

2015

334. **Le, C.M.**; Hou, X.; Sperger, T.; Schoenebeck, F.; Lautens, M. “An Exclusively *trans*-Selective Chlorocarbonylation of Alkynes Enabled by a Palladium/Phosphaadamantane Catalyst” *Angewandte Chemie International Edition* **2015**, *54*, 15879-15900. DOI: 10.1002/anie.201507883.
333. **Petrone, D.A.**; **Yen, A.**; **Zeidan, N.**; Lautens, M. “Dearomative Indole Bisfunctionalization via a Diastereoselective Palladium-Catalyzed Arylcyanation” *Organic Letters* **2015**, *17*, 4838-4841. DOI: 10.1021/acs.orglett.5b02403.

332. Ye, J.; Lautens, M. "Palladium Catalyzed Norbornene-Mediated C-H Functionalization of Arenes" *Nature Chemistry*, **2015**, *7*, 863-870. DOI: 10.1038/nchem.2372.
331. Loh, C.C.J.; Fang, X.; Peters, B.; Lautens, M. "Benzylic Functionalization of Anthrones via the Asymmetric Ring Opening of Oxabicycles Utilizing a Fourth-Generation Rhodium Catalytic System" *European Journal of Chemistry*, **2015**, *21*, 13883-13887, DOI: 10.1002/chem.201502718.
330. **Jang, Y.J.; Yoon, H.**; Lautens, M. "Rh-Catalyzed Domino Addition Enolate Arylation: Generation of 3-Substituted Oxindoles via a Rh(III) Intermediate" *Organic Letters* **2015**, *17*, 4838-4841. DOI: 10.1021/acs.orglett.5b01737
329. **Qureshi, Z.**; Schlundt, W.; Lautens, M. "Introduction of Hindered Electrophiles via C-H Functionalization in Palladium Catalyzed Multicomponent Reactions" *Synthesis* **2015**, *47*, 2446-2456. DOI: 10.1055/s-0034-1380198
327. **Le, C.M.**; Menzies, P.J.C.; **Petrone, D.A.**; Lautens, M. "Synergistic Steric Effects in the Development of a Palladium-Catalyzed Alkyne Carbohalogenation: Stereodivergent Synthesis of Vinyl Halides" *Angewandte Chemie International Edition* **2015**, *54*, 256-259. DOI: 10.1002/anie.201409248.

2014

325. **Yoon, H.J.; Petrone, D.A.**; Lautens, M. "Diastereoselective Palladium-Catalyzed Arylcyanation/Heteroarylcyanation of Enantioenriched N-Allyl Carboxamides" *Organic Letters*, **2014**, *16*, 6240-6423. DOI: 10.1021/ol503243a
324. **Zhang, L.; Qureshi, Z.**; Sonaglia, L.; Lautens, M. "Sequential Rhodium/Palladium Catalysis: Enantioselective Formation of Dihydroquinolinones in the Presence of Achiral and Chiral Ligands" *Angewandte Chemie International Edition* **2014**, *53*, 13850-13853. DOI: 10.1002/anie.201407400.
323. **Johnson, T.**; Choo, K.-L.; Lautens, M. "Rhodium-Catalyzed Arylative Cyclization for the Enantioselective Synthesis of (Trifluoromethyl)cyclobutanols" *Chemistry – A European Journal*, **2014**, *20*, 14194-14197. DOI: 10.1002/chem.201404896.
322. **Zhang, L.; Panteleev, J.**; Lautens, M. "Metal-Ligand Binding Interactions in Rhodium/Palladium-Catalyzed Synthesis of Dihydroquinolines" *Journal of Organic Chemistry* **2014**, *79*, 12159-12176. DOI: 10.1021/jo502074s
321. **Petrone, D.A.; Yoon, H.**; Weinstabl, H.; Lautens, M. "Additive Effects in the Palladium-Catalyzed Carboiodination of Chiral N-Allyl Carboxamides" *Angewandte Chemie International Edition* **2014**, *53*, 7908-7912. DOI: 10.1021/acs.orglett.5b02403.

320. Chen, B.; **Scott, M.E.**; Adams, B.A.; Hrovat, D.A.; Borden, W.T.; Lautens, M. "Computational and C-13 Investigations of the Diazadienes and Oxazadienes Formed via the Rearrangement of Methylene-cyclopropyl Hydrazones and Oximes" *Organic Letters* **2014**, *16*, 3930-3933.
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LECTURES 1986-2016

Academic Institutions

168. University of Illinois-Urbana, Aldrich™ Lecturer, November 2016.
167. KAIST, Korea, August 31, 2016.
166. Stockholm University, July 26, 2016.
166. Aldrich Lecturer, University of Pavia, April 2016
165. Aldrich Lecturer, University of Parma, April 2016.

164. Aldrich Lecturer, University of Bologna, April 2016.
163. Aldrich Lecturer, University of Milan, April 2016.
162. MIT, Organic Synthesis™ Lecturer, April 2016.
161. University of British Columbia, Okanagan, March 2016.
160. University of Pennsylvania, “Barry & Susan Trost Lecture”, November 2015.
159. RWTH Aachen, April 2015.
158. Chinese University of Hong Kong, March 2015.
157. Hong Kong University, March 2015.
156. Karlsruhe Institute of Technology, February 2015.
155. University of Stuttgart, February 2015.
154. University of Vienna, December 2014.
153. National University of Singapore, November 2014.
152. Nanyang Technological University, Singapore, November 2014.
151. Institute of Microbial Research, Tokyo, October 2014.
153. Frei University of Berlin, May 2014.
152. University of Hannover, May 2014.
151. University of Hamburg, May 2014.
150. Tel Aviv University, Israel, March 2014.
149. Technion, Haifa, Israel, March 2014.
148. LMU, Munich, December 2013.
147. University College Dublin, November 2013.
146. University of Genoa, September 2013.
145. University of Berne, March 2013.
144. ETH, Zurich, March 2013.
144. University of Cologne, August 2012.
143. EPFL, Lausanne, March 2012.
142. University Claude Bernard, Lyon, March 2012.
141. Heidelberg University, February 2012.
140. University of Fribourg, February 2012.
139. Imperial College of Science and Technology, December 2011.
138. Oxford University, December 2011.
137. Frei Univeristy of Berlin, November 2011.
136. University of Münster, November 2011.
135. Peking University, China, August 2011.
134. University of Parma, Italy, July 2011.
133. University of Marseille, France, June 2011.
132. University of Leipzig, May 2011.
131. University of Dresden, May 2011.
130. University of Giessen, Germany, May 2011.
129. Philipps University of Marburg, Germany, May 2011.
128. TUM, Munich, Germany, April 2011.
127. LMU, Munich, Germany, April 2011.
126. University of Basel, Switzerland, February 2011.
125. University of Zurich, February 2011.
124. Cambridge University, UK, November 2010.
123. University of Hong Kong, Ocotober 2010.

122. University of Münster, June 2010.
121. CNRS, Gif sur Yvette, February 2010
120. University of British Columbia, January 2010.
119. University of Victoria, January 2010.
118. Simon Fraser University, January 2010.
117. University of Frankfurt, December 2009.
116. University of Aachen, December 2009.
115. Technical University of Berlin, November 2009.
114. Free University of Berlin, November 2009.
113. University of Pittsburgh, October 2009.
112. Spinks Lectureship, University of Saskatchewan, April 2009.
111. Gif, France, November 2008.
110. Ecole Polytechnique, June 2008.
109. ICIQ, Tarragona Spain, July 2008.
108. University of Marseille, June 2008
107. University of Paris VI, June 2008.
106. Scripps Research Institute, November 2007.
105. University of Rochester, September 2007.
104. RIKEN, August 2007.
103. University of Padua, June 2006.
102. University of Venice, June 2006.
101. University of Chicago, September 2006.
100. University of Santiago de Compostela, Visiting Professor, June 2006.
99. University of Calgary, February 2005 Merck Lecturer.
98. University of Tokyo, August 2004.
97. Tokyo Institute of Technology, August 2004. "100 Memorial Fund Visiting Professor"
96. Kyoto University, August 2004.
95. Liverpool University, AstraZeneca Northern UK Lecture Tour, July 2004.
94. Manchester University, AstraZeneca Northern UK Lecture Tour, July 2004.
93. Leeds University, AstraZeneca Northern UK Lecture Tour, July 2004.
92. University of Munich, March 2004.
91. ENSCP, Paris, June 2003.
90. Technical University of Berlin, June 2003.
89. Simon Fraser University, February 2003 "Anormed Lecturer."
88. University of British Columbia, February 2003 "Anormed Lecturer."
87. University of Illinois, Urbana, January 2002 "Bristol-Myers Squibb Lecturer."
86. University of Alberta, April 2001, "BioChem Pharma Lecturer".
85. University of Indiana, Bloomington, March 2001.
84. University of Connecticut, April 2000.
83. Florida State University, March 2000.
82. McGill University, February 2000 "McGill Society Lecturer"
81. Oberlin College, March 1999.
80. Massachusetts Institute of Technology, March 1999.
79. Okayama University, June 1998.
78. Kyoto University, June 1998.
77. Boston College, April 1998.

76. Boston University, April 1998
75. Southampton University, March 1998.
74. Colorado State University, February 1998. "Organic Synthesis Distinguished Lecturer"
73. ETH Zurich, January 1998.
72. Northwestern University, October 1997.
71. Glasgow University, September 1997, "Merck Lecturer"
70. University of Geneva, June 1997.
69. Westfälische Wilhelms-Universität, Münster, May 1997.
68. RWTH Aachen, May 1997.
67. University of Bonn, May 1997.
66. Dortmund University, May 1997.
65. Heidelberg University, April 1997.
64. Karlsruhe University, April 1997.
63. Purdue University, March 1997.
62. IUPUI, March 1997.
61. University of Wisconsin-Madison, March 1997.
60. Syracuse University, March 1997.
59. Emory University, November 1996.
58. University of Geneva, October 1996.
57. ETH Zurich, June 1996.
56. University of Marburg, May 1996.
55. Max-Planck-Institut für Kohlenforschung, May 1996.
54. University of Minnesota, April 1996.
53. University of Bern, March 1996.
52. University of South Carolina, February 1996.
51. U. California-Irvine, February 1996.
50. California Institute of Technology, February 1996.
49. U. California-Berkeley, February 1996. "Pfizer Lecturer"
48. Stanford University, February 1996.
47. University of Buffalo, February 1996.
46. University of Basel, January 1996.
45. University of Michigan, November 1995.
44. Imperial College of Science and Technology, November 1995.
43. Cambridge University, November 1995
42. University of Pittsburgh, January 1995.
41. St. Mary's University, January 1995.
40. Acadia University, January 1995.
39. Dalhousie University, January 1995.
38. Osaka City University, November 1994.
37. Osaka University, November 1994.
36. Nagoya University, November 1994.
35. Mie University, October 1994.
34. Tokyo Institute of Technology, October 1994.
33. Keio University, October 1994.
32. University of Tokyo, October 1994.
31. Science University of Tokyo, October 1994.

30. Queens University, October 1994.
29. University of British Columbia, February 1994.
28. University of Victoria, February 1994.
27. Université Bordeaux, November 1993.
26. ENSCP, November 1993.
25. Université Nantes, November 1993.
24. CNRS, Gif-sur-Yvette, October 1993.
23. Université Grenoble, October 1993.
22. Université Lyon, October 1993.
21. Université Paris-Sud, October 1993.
20. Université Pierre et Marie Curie, October 1993.
19. University of Barcelona, September 1993.
18. University of Tarragona, September 1993.
17. McMaster University, March 1993.
16. Duke University, December 1992.
15. University of Western Ontario, December 1992.
14. University of Basel, September 1992.
13. University of Illinois, March 1992.
12. York University, December 1991.
11. University of Winnipeg, November 1991.
10. University of Michigan, November 1991.
9. Indiana University, October 1991
8. Wayne State University, April 1991.
7. University of Guelph, March 1991.
6. University of Waterloo, December 1990.
5. University of Rochester, November 1990.
4. University of Montreal, October 1990.
3. University of Alberta, June 1990.
2. McMaster University, September 1989.
1. University of British Columbia, October 1986.

**National and International Conferences - Invited (I), Plenary (P) and Keynote (K)
Lectures**

118. K.V. Thomas International Symposium, Cochin, India, February 2017.
117. Pacificchem 2015, Honolulu, December 2015 (2I).
116. Pauling Symposium in Honour of Barry M. Trost, Oregon, December 2015 (I).
115. Hanessian 80th Birthday Symposium, Montreal October 2015 (I).
114. IRTG Symposium Muenster, October 2015 (I).
113. Zard 60th Birthday Symposium, Paris, September 2015 (P).
112. CSC Ottawa, June 2015 (I)
111. ACS Denver, Industry Chemistry Award Symposium, March 2015. (I)
110. The Future of Asymmetric Catalysis Conference, Telluride CO, June 2014. (P)-declined
109. ACS Dallas, H.C. Brown Symposium, March 2014. (I)

108. Ecole Polytechnique Half Day Symposium, December 2013. (P)
107. Tetrahedron Symposium Seoul, Korea, October 2013. (P)
106. German Chemical Society Meeting, Darmstadt, September 2013. (P)
105. OMCOS 17, Fort Collins, CO, July 2013. (I)
104. 4th Global Congress on Catalysis, June 2013, Dalian, China (P)-unable to attend due to injury
103. Nagoya Symposium, May 2013, Nagoya, Japan. (P)
102. CSC Quebec City, May 2013. "CIC Award Lecture" (K)
101. Flohet 14, Gainesville, FL, March 2013. (P)
100. Organometallics and Catalysis (Om&Cat), Beijing, October 2012. (P)
99. Gordon Research Conference on Heterocycles, Salve Regina, RI, June 2012. (P)
98. International Symposium on Organic Synthesis and Drug Development, Nanjing, May 2012. (P)
97. Pedler Symposium, University of Glasgow, December 2011. (K)
96. 10th CSCB, Dublin, Ireland, December 2011. (P)
95. 2nd World Congress on Catalytic Asymmetric Synthesis, Beijing, August 2011. (K)
94. 16th OMCOS, Shanghai, July 2011. (I)
93. Canadian Society for Chemistry, Symposium on Organometallic Reactions, Montreal, June 2011. (I)
92. CaSuS Meeting, Goettingen, October 2010. (P)
91. Canada-China Symposium on Catalysis, Kunming, October 2010. (P)
90. ICOS, Bergen, Norway, August 2010 (P)
89. KFOS, Ottawa, May 2010 (P)
88. 10th Organic Workshop for Organic Chemistry, Niagara on the Lake, May 2010. (P)
87. Young Chemists Symposium Göttingen, April 2010. (P)
86. Eli Lilly Grantee Symposium, March 2010. (P)
85. New Horizons Conference on Catalysis, Cologne, November 2009. (P)
84. ACS Perspectives Conference, North Carolina, November 2009. (P)
83. QOMSBOS 20th Anniversary Conference, Quebec City, October 2009. (P)
82. Lilly/Peking University Symposium, Beijing, October 2009. (P)
82. ICHC, St. John's, August 2009. (I)
81. 21st Oxford Synthesis Conference, July 2009. (P)
80. Grassmere Synthesis Conference, Lake District, UK, May 2009
79. Royal Australian Organic Conference, Hobart, Tasmania, December 2008 (P)-declined.
78. Chinese Chemical Conference, Beijing, November 2008 (P)-declined.
77. New Horizons Symposium, Clearwater, Florida, November 2008 (P)-declined.
76. FAST Symposium, Philadelphia, October 2008 (P)
75. Shanghai, Organic Chemistry Symposium, Shanghai, China, September 2008 (P).
74. European Conference on Heterocyclic Chemistry, Antwerp Belgium, September 2008 (P)
73. ICIQ Summer School, Tarragona, Spain, July 2008 (P)
72. ICOS, Korea, June 2008 (I)-declined.
71. Symposium on Advanced Organic Synthesis, Lake Biwa, Japan, May 2008 (P)
70. Shasun Pharma Conference, Amelia Island, USA, Feb 2008. (P)
69. DFG Symposium Münster, Germany September 2007. (P)
68. Gordon Research Conference on Natural Products, July 2007 (P).
67. Attilio Corbella Summer School of Organic Chemistry, Gargnano, Italy, June 2007 (P).

66. A.C. Cope Symposium, ACS Meeting, San Francisco, September 2006 (P).
65. Alfred Bader Symposium, CSC Meeting, Halifax, May 2006 (P).
64. Pacificchem Conference, Honolulu, Hawaii, December 2005. (2I)
63. *Stereocat 2005*, Barcelona, September 2005. (P)
62. 13th IUPAC OMCOS, Geneva, Switzerland, July 2005. (P)
61. Heterocycles Gordon Research Conference, July 2005. (I)
60. 4th Symposium on Recent Developments in Organometallic and Organic Synthesis, Montreal, April 2005. (P)
59. IASOC Conference, Ischia, Italy, September 2004. (P)
58. National AstraZeneca Symposium, Leeds UK, July 2004. (P)
57. Gordon Research Conference, July 2004. (I)
56. CSC Conference, May 2004 "Lemieux Award Lecture" (P)
55. MONA Symposium on Natural Products, Kingston, Jamaica, January 2004 (P).
54. CSCB Meeting, Dublin, Ireland, December 2003 (P).
53. UIMP Summer School, Santander, Spain, July 2003.
52. IUPAC/CSC Joint Conference, Ottawa, Canada August 2003 (I).
51. Solvias Symposium, Basel Switzerland, September 2002 (P)
50. 37th EUCEHM Conference on Stereochemistry "Burgenstock," Switzerland, April 2002 (P).
49. Merck Medicinal Chemistry Symposium, La Sapiniere, PQ, August 2001 (P).
48. 18th International Congress of Heterocyclic Chemistry, Yokohama, Japan, July 2001 (I).
47. 30th Cross Coupling Symposium, Kyoto Japan, July 2001 (I).
46. B.M.Trost Symposium, Stanford University, June 2001 (P).
45. Visions in Chemistry Symposium, Aventis Pharmaceuticals, NJ., USA, May 2001 (P).
44. Pacificchem 2000, Honolulu, December 2000 (2I).
43. 13th Jacques Cartier Conference, Montreal, October 2000 (P).
42. Philadelphia Organic Chemists Club, Guest Speaker, September 2000 (P).
41. Belgian Organic Synthesis Symposium (BOSS-8), Ghent, Belgium, July 2000 (P).
40. 13th IUPAC Conference on Organic Synthesis (ICOS-13), Warsaw, Poland, June 2000 (I).
39. 83rd CSC Conference, "Larry Weiler Symposium", Calgary, June 2000 (I).
38. NJ Section of the ACS, "Chemistry at the New Millenium Conference" May 2000 (P).
37. Clean Processes and Environment : The Catalytic Solution, Lyon, France, December 1999 (P).
36. 25th Symposium on Progress in Organic Reactions and Syntheses. Toyama, Japan Nov. 1999 (P).
35. Nagoya Conference on Lewis Acids, Nagoya, November 1999 (P).
34. French Chemical Society Conference, Paris, September 1998 (I).
33. 5th International Symposium on Carbanion Chemistry, Sendai, Japan, August 1998 (I).
32. 81st CSC Conference, Whistler, B.C. June 1998 (I).
31. 13th Nozaki Symposium, Sapporo, Japan, June 1998 (P).
30. Chiral USA, San Francisco, May 1998 (P).
29. 5th North American Chemical Congress, Cancun, Mexico November 1997 (2I).
28. 9th IUPAC OMCOS Conference, Göttingen, Germany, July 1997 (I).
27. 7th Latest Trends in Organic Synthesis Conference, Gainesville, Florida, October 1996 (P).
26. Group d'Etudes en Chimie Organic XXXVII, La Londe les Maures, France, August 1996 (P).

25. Gordon Conference on Reactions and Processes, New Hampton, New Hampshire, July 1996 (I).
24. 79th CSC Conference, Newfoundland, June 1996. (Synthesis Symposium) (I).
23. 1995 International Chemical Congress of Pacific Basins, Honolulu Hawaii, December 1995 (I).
22. 6th Ontario-Quebec Minisymposium in Synthetic and Bioorganic Chemistry, October 1995 (I).
21. 15th International Conference on Heterocyclic Chemistry, Taipei, Taiwan, August 1995 (I).
20. Gordon Conference on Heterocycles, New Hampton, New Hampshire, July 1995 (I).
19. Keynote Lecturer, Atlantic Division Marine Natural Products Conference, Acadia, July 1995 (P).
18. 6th International Kyoto Conference on Organic Chemistry, Kyoto, Japan, November 1994 (I).
17. 30th Mexican Chemical Society Conference, Cancun, October 1994 (P).
16. 6th Brazilian Meeting on Organic Synthesis, Sao Paulo, September 1994 (P).
15. 77th CSC Conference (Merck Frosst Centre for Therapeutic Research Award), June 1994 (P).
14. Allelix Biopharmaceuticals Symposium, February 1994 (P).
13. 2nd CIC Workshop on Organic Synthesis, May 1993 (Organizer)
12. Ontario-Four Motors of Europe Conference on Synthesis, Lyon, France, October 1992 (P).
11. 9th IUPAC Conference on Organic Synthesis, Montreal, June 1992 (I).
10. 1st Bilateral Canada-China Symposium on Organic Chemistry, May 1992 (P).
9. 1st Ontario-Quebec Minisymposium in Synthetic and Bioorganic Chemistry, October 1991 (Organizer)
8. 22nd NSF Workshop on Organic Synthesis and Natural Products Chemistry, July 1991 (I).
7. 75th CSC Conference (Symposium on Organometallics in Organic Synthesis), Hamilton, June 1991.
6. 1st CIC Workshop on Organic Synthesis, June 1991 (I).
5. ACS Midwest Regional Meeting, Indianapolis, May 1991 (P).
4. 8th IUPAC Conference on Organic Synthesis, Helsinki, Finland, July 1990 (I).
3. Gordon Conference on Organic Reactions and Processes, July 1990 (I).
2. SynFest, Carleton University, May 1990 (P).
1. ACS Meeting, Olefin Metathesis Symposium, Boston, MA. April, 1990 (I).

Industrial

128. Alphora Inc., July 2016.
127. Sunovion Pharma, March 2016.
126. Bayer Wuppertal, April 2015.
125. Boehringer Ingelheim, Biberach, February 2015.
124. Merck Boston, February 2015.
123. Boehringer Ingelheim, Vienna, December 2014.
122. Alphora Inc., Mississauga, May 2014.
121. Galderma, Nice, September 2013.

120. Gilead, San Francisco, October 2013.
119. BASF, Ludwigshafen, August 2012.
118. Bayer, Leverkusen, August 2012.
117. Sanofi, Frankfurt, August 2012.
116. Abbott Laboratories, Chicago, April 2012.
115. Lonza, Visp, Switzerland, March 2012.
114. GSK, Stevenage, UK. December 2011.
113. Pharmaron, China, August 2011.
112. Roche China, July 2011.
111. Pfizer Autumn Symposium, November 2010.
110. Bayer-Schering, Berlin June 2010.
109. Sanofi-Aventis, Frankfurt, November 2009.
108. Bayer Crop Science, Frankfurt, November 2009.
107. Genentech, San Francisco, October 2009.
106. Xenon Pharmaceutical, Burnaby B.C. April 2009.
105. Sanofi-Aventis, Bagneau, France November 2008.
104. Boehringer Ingelheim, Montreal, October 2008.
103. AstraZeneca, Montreal, February 2008.
102. BMS, Wallingford, CT December 2007.
101. Pfizer, La Jolla, November 2007.
100. Merck West Point, PA, October 2007.
99. Amgen, Thousand Oaks, CA, October 2007.
98. Merck Boston, August 2007.
97. FIS, Vicenza, Italy, June 2007.
96. Sepracor, May 2007.
95. Merck Process R&D, May 2007.
94. Albany Molecular Research, Albany, October 2006.
93. Albany Molecular Research, Syracuse, October 2006.
92. Merck Frosst Centre for Therapeutic Research, Montreal, March 2006.
91. Merck Research Laboratories, Rahway, February 2006.
90. BMS Medicinal Chemistry Group, New Jersey, November 2005.
89. BMS Process Group, New Jersey, November 2005.
88. Boehringer-Ingelheim, CT. September 2005.
87. Merck San Diego, November 2004.
86. Merck Banyu, Tsukuba, Japan, August 2004.
85. BMS Syracuse, April 2004.
84. Merck Rahway, March 2004.
83. J&J Pharmaceuticals, Philadelphia, November 2003.
82. BASF, St. Johannes, Germany, October 2003.
81. DuPont Pharmaceuticals, Delaware, September 2003.
80. Merck AG, Darmstadt, Germany, June 2003.
79. Aventis AG, Frankfurt, Germany June 2003.
78. Schering AG, Berlin Germany, June 2003.
77. AnorMed Pharmaceuticals, Vancouver, BC, February 2003.
76. Abbott Laboratories, Chicago, IL, September 2002.
75. Roche Biosciences, Nutley NJ July 2002.

74. IRCM, Rome, Italy, May 2002.
73. Roche AG, Basel Switzerland, May 2002.
72. Eli Lilly, Indianapolis, USA, March 2001.
71. AstraZeneca USA, September 2000.
70. AstraZeneca Research Showcase, Mississauga, September 2000.
69. AstraZeneca Research Montreal, July 2000.
68. MerckFrosst Canada, Montreal, May 2000
67. Merck Research Laboratories, Rahway, NJ April 2000.
66. Ligand Pharmaceuticals, San Diego, CA, May 2000.
65. Bayer Research Laboratories, CT, March 2000.
64. Pfizer Central Research, Groton CT March 2000.
63. Pharmacia and Upjohn, Kalamazoo, MI, January 2000.
62. Pfizer Japan, Nagoya, November 1999.
61. Takeda Pharmaceuticals, Osaka, November 1999.
60. Novartis UK, June 1999.
59. Novartis Dermatological Research Center, Vienna, Austria, June 1999.
58. Novartis Pharma, Basel, Switzerland, June 1999.
57. Novartis USA, New Jersey, October 1998.
56. Merck Frosst Centre for Therapeutic Research, Montreal, October 1998.
55. Astra Charnwood, UK, September 1998.
54. Astra Draco, Lund, September 1998.
53. Astra Process Research, Stockholm, September 1998
52. Banyu Pharmaceuticals, Tokyo, Japan, July 1998.
51. Kyowa Hakko Kogyo, Osaka Japan, July 1998.
50. Astra Research Centre Montreal, June 1998.
49. Sepracor, Marlborough MA, June 1998.
48. Novartis, Osaka, Japan, June 1998.
47. Takeda Pharmaceuticals, Osaka, Japan, June 1998.
46. Roche Biosciences, Nutley, NJ, May 1998.
45. Merck Frosst Centre for Therapeutic Research, Mt. Tremblant, February 1998.
44. BioChem Therapeutic, February 1998.
43. SmithKline Beecham, U.K. June 1997.
42. Boehringer Ingelheim, Germany, May 1997.
41. BASF, Ludwigshafen, Germany May 1997.
40. Abbott Laboratories, Chicago, March 1997.
39. GlaxoWellcome Inc., N.C., February 1997.
38. Ciba-Geigy, Switzerland, October 1996.
37. Hoffmann La Roche, Switzerland, June 1996.
36. Sandoz Preclinical Research, Switzerland, June 1996.
35. Hoechst Pharma, Frankfurt, Germany, June 1996.
34. Bristol-Meyers Squibb, New Brunswick, NJ, November 1995.
33. BioMega/Boehringer Ingelheim Research Inc., Montreal, November 1995 .
32. Astra Hassle, Sweden, November 1995.
31. Merck Research Centre, UK, November 1995.
30. Astra Pain Research Unit, Montreal, September 1995.
29. Sandoz Dermatological Research Center, Vienna, Austria, May 1995.

28. Byk Gulden, Konstanz, Germany, May 1995.
27. Merck Frosst Centre for Therapeutic Research, Montreal, P.Q. May 1995.
26. Bristol-Myers Squibb, Princeton, NJ, March 1995.
25. DuPont Central Research, Wilmington, DE, February 1995.
24. Pfizer Research Laboratories, Process Research Group, Groton CT, December 1994.
23. Pfizer Pharmaceuticals, Nagoya, Japan, November 1994.
22. Sagami Research Institute, October 1994.
21. Eli Lilly Symposium, Indianapolis, IN, March 1994.
20. Merck Laboratories, Process Group, Rahway, NJ, February 1994.
19. Allelix Biopharmaceuticals (New MedChem Laboratories Symposium), Mississauga, Feb. 1994
18. Rhone-Poulenc, Vitry, France, October 1993.
17. Syntex Canada, April 1993.
16. Sterling Winthrop, N.Y., December 1992.
15. Burroughs Wellcome, N.C., December 1992.
14. Merck & Co., West Point, PA, November 1992.
13. Laboratoires Fournier, Dijon, France, October 1992.
12. Hoffmann LaRoche, Switzerland, September 1992.
11. R.W. Johnson Pharmaceutical Research Institute, PA, January 1992.
10. Eli Lilly Corporation, Indianapolis, IN, October 1991.
9. Glaxo Pharmaceuticals, Greenford, U.K., September 1991.
8. ICI Chemicals, Plant Protection Division U.K., August 1991.
7. Pfizer Inc., Sandwich, Kent, U.K., August 1991.
6. Eastman Kodak, Rochester, N.Y., November 1990.
5. BioMega Corporation, Montreal, P.Q., October 1990.
4. Exxon Corporation, Baytown, TX., September 1990.
3. Sandoz Corporation, Basel, Switzerland, July 1990.
2. Ciba-Geigy, Agricultural Division, Basel, Switzerland, July 1990.
1. Xerox Research Centre of Canada, May 1990.