CURRICULUM VITAE

H. Blaine Lawson, Jr.

BORN: January 4, 1942, Norristown, PA

EDUCATION:

Sc.B.–A.B. Applied Mathematics – Russian Literature, Brown University	1964
M.S. Mathematics, Stanford University	1966
Ph.D. Mathematics, Stanford University	1968

Advisor: Robert Osserman

FULL-TIME TEACHING AND RESEARCH POSITIONS

University of California, Berkeley (Lecturer)	1968-70
University of California, Berkeley (Asst. Prof.)	1970-71
University of California, Berkeley (Assoc. Prof.)	1971-75
University of California, Berkeley (Professor)	1975-80
University of California, Berkeley (Assistant Dean)	1974-77
State University of New York, Stony Brook, (Professor, Chairman, 89-91)	1978-87
State University of New York, Stony Brook, (Leading Professor)	1987-93
State University of New York, Stony Brook, (Distinguished Professor, Co-Chair 1995-96)	1993

EXTENDED VISITING POSITIONS:

Instituto de Matematica Pura e Aplicada	(Aug. '70 — Dec. 70)
Institute for Advanced Study, Princeton	(Sept. '72. — June '73)
Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette	(Sept. '77. — June '78)
Ecole Polytechnique, Paris	(Sept. '83. — June '84)
Research Institute for Math. Sciences, Kyoto	(Sept. '86 — Nov. '86)
Tata Inst. for Fundamental Resarch, Bombay	(Dec. '86. — Jan. '87)
Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette	(Jan. '93. — June '93)
Mathematical Sciences Research Institute, Berkeley	(Sept. '93. — Jan. '94)
Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette	(Sept. '99. — July '00)
Institut Henri Poincaré, Paris	(Dec. '03 — Jan. '04)
Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette	(Sept. '07. — Dec '07)
Institute for Advanced Study, Princeton	(Feb. '09)

HONORS:

Sloan Research Fellow	1970-73
Leroy P. Steele Prize (A.M.S.)	1975
Guggenheim Fellow	1983-84
Fellow of the Japan Society for Promotion of Sciences, Kyoto	1986
Addresses to the Intermational Congress of Mathematicians	1974, 1994
Hardy Lecturer of the London Mathematical Society	1991
Aisenstadt Chair, CRM, Montreal	1995
National Academy of Sciences	1995
Brazilian Academy of Sciences	1999
American Academy of Arts and Sciences	2013

SOME MAJOR ADDRESSES:

A.M.S. Winter Meeting	1972
International Congress of Mathematicians	1974
Principal Speaker: AMS Regional Conference on foliations	1974
Marston Morse Memorial Lecturer, I.A.S., Princeton	1981
Principal Lecturer: DD2 Symposium, Shanghai and Hefei	1981
M. B. Porter Lecturer, Rice University	1982
Principal Speaker: AMS Regional Conference on Gauge Field Theory	1983
Mathematical Society of Denmark	1983
Mathematical Society of Switzerland	1984
Bourbaki Seminar, Paris	1984
College of Science Lecturer, Notre Dame	1986
Canadian Mathematical Society	1986
Hermann Weyl Symposium	1987
Rufus Bowen Lecturer, Berkeley	1987
Jacqueline B. Lewis Memorial Lectures, Rutgers	1988
do Carmo Symposium, I.M.P.A.	1988
René Thom Symposium, Paris	1988
Principal Lecturer at A.M.S. Summer Institutes:	
Differential Geometry	1973
Several Complex Variables	1975
Geometric Measure Theory	1984
Von Neumann Symposium, MSRI	2003
The Bruce Reinhart Memorial Symposium, Maryland	1989
The Gergen Memorial Lectures, Duke	1990
The Rademacher Lecturer, University of Pennsylvania	1991
The Hardy Lecturer, The London Mathematical Society	1991
International Congress of Mathematicians	1994
Aisenstadt Lecturer, CRM, Montreal	1995
Lecture Series at UNAM, Mexico, 60th Anniversary	2002
IMPA, 50th Anniversary Conference	2003
Plenary Lecture, Washington University, St. Louis, 150th Anniversary	2004
IHP Symposium on Several Complex Variables and Dynamics	2004
Address, Oxford Univerisity	2007
Distinguished Lecture Series, University of Wisconsin	2008
Invited Lecture Series, Institute for Advanced Study	2009
Frontiers Lectures, Texas A and M	2009
Rouse Ball Lecture, Cambridge University, England	2010
Principal Lecturer, Surveys in Geometry, Harvard University	2011

SOME PROFESSIONAL SERVICE APPOINTMENTS:

Chairman, National Committee for Mathematics
Vice President, A. M. S.
Member of the Council, A.M.S.
Trustee, Mathematical Sciences Research Institute
Blue Ribbon Panelist, P.Y.I. Awards
Editor: *Topology*
Editor: *Journal of Differential Geometry*
Editor: *Journal of the A.M.S.* (Chair, 1994)
Editor: *Bulletin of the Brazilian Math. Soc.*
Assoc. Editor: *Annals of Mathematics*
Assoc. Editor: Princeton Mathematical Series
Assoc. Editor: Pitman Mathematical Series
Organizer of mathematical meetings:
    Summer Institute in Differential Geometry
    JDG Meeting: "Surveys in Geometry" at Harvard
    Geometry Festivals at Stony Brook
    MSRI Workshop in Geometry
    International Meeting on the Dirac Operator, Luminy
    Milnor Symposium at Stony Brook
    Organizer of year-long program in Geometry at M.S.R.I., 1993-94
    Organizer of Symposium: *Connections in Mathematics and Physics*, Stony Brook, 1998
Committees of The International Congress of Mathematicians, 1985, 1989, 1993, 2001.
Co-Director U.S.-Brazilian Mathematical Exchange Program 1982-98.
Vice President of the American Mathematical Society 1997-2000.
Oversight and Review Committee for:
    Institute for Advanced Study (2002)
    Mathematics Directorate of NSF (2003)
    Instituto de Matematica Pura e Aplicada (2003)
Member of Fields Medal Selection Committee, 2002.

Ph.D. Thesis Students (graduated):

1. Wu-Hsiung Ushi Huang   1970
2. Shing-Tung Yau   1971
3. William Meeks   1975
4. Jonathan Sacks   1975
5. Robert Uomini   1976
6. Doris Fischer-Colbrie   1978
7. Walter Wei   1980
8. Michael Anderson   1981
9. Sebastiao Carneiro Almeida   1983
10. Zhiyong Gao   1984
11. Rodney Carr   1984
12. Gary Kerbaugh   1985
13. Ji-Ping Sha   1986
14. Bonaventure Loo   1987
15. Marcello Llarull   1988
16. Freddie Santiago   1988
17. Haiwan Chen   1989
18. Paulo Lima-Filho   1989
19. T. K. Lam   1990
20. Javier Elizondo   1992
21. Pawel Gajer   1993
22. Robert Stingley   1995
23. Sunil Nair   1996
24. Carlos Marques   1997
25. Janko Latschev   1998
26. Pedro dos Santos   1999
27. Sergei Panafidin   2003
28. Ionut Chiose   2004
29. Jyh-Haur Teh   2005
30. Zhaohu Nie   2005
31. Wenchuan Hu   2006
32. Ibrahim Unal   2007
33. Luis Lopez   2007
34. Andrew Clarke   2008
35. Ning Hao   2008
36. Pedro Solórzano   2011
37. Yongsheng Zhang   2013
38. Steve Gindi   2014
39. Xuan Chen   2017

BIBLIOGRAPHY

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[2] *Local rigidity theorems for minimal hypersurfaces*, Annals of Mathematics **89** (1969), 187-197.

[3] *Compact minimal surfaces in S^3*, pp. 275-282 in Proceedings of Symposia in Pure Mathematics **15**, Global Analysis, A. M. S., Providence, 1970.

[4] *The global behavior of minimal surfaces in S^n*, Annals of Mathematics, **92** (1970), 224-262.

[5] *Complete minimal surfaces in S^3*, Annals of Mathematics, **92** (1970), 335-374.

[6] *The unknottedness of minimal embeddings*, Inventiones Math. **11** (1970), 183-187.

[7] *The Riemannian geometry of holomorphic curves*, Carolina Conference Proceedings, Holomorphic Mappings and Minimal Surfaces, Chapel Hill, North Carolina (1970), 86-107.

[8] *Rigidity theorems in rank-1 symmetric spaces*, Joural of Differential Geometry, **4** (1970), 349-357.

[9] *Codimension-one foliations of spheres*, Bulletin of A. M. S. **77** (1971), 437-438.

[10] *Some intrinsic characterizations of minimal surfaces*, Journal d'Analyse Mathematique **24** (1971), 151-161.

[11] *Minimal submanifolds of low cohomogeneity* (with Wu-yi Hsiang), Journal of Differential Geometry **5** (1971), 1-38.

[12] *Codimension-one foliations of spheres*, Annals of Mathematics **94** (1971), 494-503.

[13] *Spherical images of convex surfaces*, Proceedings of the American Mathematical Society **31** (1972), 635-636.

[14] *Fibered knots and foliations of highly connected manifolds* (with Alan H. Durfee), Inventiones Mathematicae **17** (1972), 203-215.

[15] *Compact manifolds of non-positive curvature* (with S.T. Yau), Journal of Differential Geometry **7** (1972), 211-228.

[16] *The equivariant Plateau problem and interior regularity*, Transactions of the American Mathematical Society **173** (1972), 231-249.

[17] Lectures on Minimal Submanifolds, I.M.P.A. Press, Rio de Janeiro, 1973.

[18] *On stable currents and their application to global problems in real and complex geometry* (with James Simons), Annals of Mathematics **98** (1973), 427-450.

[19] *Boundaries of complex analytic varieties* (with F. Reese Harvey), Bull. A. M. S. **80** (1974), 180-184.

[20] Minimal Varieties in Real and Complex Geometry, Les Presses de L'Universite de Montreal, 1974.

[21] *Transgressions, Chern-Simons invariants and the classical groups* (with James L. Heitsch), Journal of Differential Geometry, **9** (1974), 423-434.

[22] *Scalar curvature, non-abelian group actions, and the degree of symmetry of exotic spheres* (with Shing Tung Yau), Commentarii Mathematici Helvetici **49** (1974), 232-244.

[23] *Extending minimal varieties* (with F.R. Harvey), Inventiones Mathematicae **28** (1975), 209-226.

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[27] *On boundaries of complex analytic varieties, I* (with F.R. Harvey), Annals of Mathematics **102** (1975), 223-290.

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[30] *The question of holomorphic carriers*, Proceedings of Symposia in Pure Mathematics **30**, American Mathematical Society (1976), 115-124.

[31] *Non-existence, non-uniqueness and irregularity of solutions to the minimal surface system* (with Robert Osserman), Acta Mathematica **139** (1977), 1-17.

[32] *On boundaries of complex analytic varieties, II* (with F. Reese Harvey), Annals of Mathematics **106** (1977), 213-238.

[33] *Stability and gap phenomena for Yang-Mills fields* (with Jean-Pierre Bourguignon and James Simons), Proceedings of the National Academy of Sciences of the USA **76** (1979), 1550-1553.

[34] *Geometries associated to the group $SU(n)$ and varieties of minimal submanifolds arising from the Cayley arithmetic* (with Reese Harvey), pp. 43-59 in "Minimal Submanifolds and Geodesics", Kaigai Publications, Tokyo, 1978.

[35] *A constellation of minimal varieties defined over the group G_2* (with Reese Harvey),pp. 167-187 in "Partial Differential Equations and Geometry", Marcel Dekker, New York, 1979.

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[37] *Clifford bundles, immersions of manifolds and the vector field problem* (with M.L. Michelsohn), Journal of Differential Geometry, **15** (1980), 237-267.

[38] *Spin and scalar curvature in the presence of a fundamental group. I* (with M. Gromov), Annals of Mathematics **111** (1980), 209-230.

[39] *The classification of simply connected manifolds of positive scalar curvature* (with M. Gromov), Annals of Mathematics **111** (1980), 423-434.

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[49] *An intrinsic characterization of Kahler manifolds* (with R. Harvey), Inventiones Math. **74** No. 2 (1983), 169-198.

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[72] *Algebraic cycles and infinite loop spaces* (with C. Boyer, P. Lima-Filho, B. Mann, M.-L. Michelsohn), Inventiones Math. **113** (1993), 373-388.

[73] A Theory of Characteristic Currents Associated with a Singular Connection (with R. Harvey), Astérisque **213**, Société Math. de France, Paris, 1993.

[74] *Levels of holomorphic approximation*, pp. 574-585 in Proceedings of the International Congress of Mathematicians, Zürich, 1994, Birkhäuser Press, Basel, 1995.

[75] *A theory of characteristic currents associated with a singular connection* (with R. Harvey), Bull. A.M.S. **31** (1994), 54-64.

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[89] *Boundaries of varieties in projective manifolds*, (with R. Harvey), J. Geom. Analysis **14** (2004), 673-695. ArXiv:math.CV/0512490.

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[95] *Algebraic cycles and the classical groups, II, The quaternionic case* (with P. Lima-Filho and M.-L. Michelsohn), Geometry and Topology **9**, (2005), 1187-1220.

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[97] *Projective hulls and the projective Gefand transformation*, (with R. Harvey), Asian J. Math. **10**, no. 2 (2006), 279-318. ArXiv:math.CV/0510286.

[98] *Projective linking and boundaries of holomorphic chains in projective manifolds, Part I*, (with R. Harvey), in "The Many Facets of Geometry: a Tribute to Nigel Hitchin", J.-P. Bourguignon, O. Garcia-Prada, Simon Salamon, Eds., Oxford University Press, Oxford, England, 2008. ArXiv:math.CV/0512379

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[102] *Plurisubharmonic functions in calibrated geometries*, (with R. Harvey), ArXiv:math.CV/0601484.

[103] *Boundaries of positive holomorphic chains and the relative Hodge question*, (with R. Harvey), Astérisque **328** (2009), 207-222. ArXiv:math.CV/0610533

[104] *Remarks on the Alexander-Wermer Theorem*, (with R. Harvey), Mathemática Contemporânea **31** (2006), 53-64. ArXiv:math.CV/0610611

[105] *The projective hull of certain curves in $\mathbf{C}^n$*, (with R. Harvey and J. Wermer), Astérisque **322** (2008), 241-254. ArXiv:math.CV/0611482.

[106] *An introduction to potential theory in calibrated geometry*, (with R. Harvey), Amer. J. Math. **131** no. 4 (2009), 893-944. ArXiv:math.0710.3920.

[107] *Duality of positive currents and plurisubharmonic functions in calibrated geometry*, (with R. Harvey), Amer. J. Math. **131** no. 5 (2009), 1211-1240. ArXiv:math.0710.3921.

[108] *Dirichlet duality and the non-linear Dirichlet problem*, (with R. Harvey), Comm. on Pure and Applied Math. **62** (2009), 396-443.

[109] *On the complement of the projective hull in $\mathbf{C}^n$*, (with J. Wermer). ArXiv:math.CV/0704.2849.

[110] *Analytic disks and the projective hull*, (with J. Wermer). ArXiv:math.CV/0806.4776.

[111] *Plurisubharmonicity in a general geometric context*, (with R. Harvey), Geometry and Analysis **1** (2010), 363-401. ArXiv:0804.1316

[112] *Dirichlet duality and the non-linear Dirichlet problem on Riemannian manifolds*, (with R. Harvey), J. Diff. Geom. **88** No. 3 (2011), 395-482. ArXiv:0907.1981.

[113] *Hyperbolic polynomials and the Dirichlet problem*, (with R. Harvey), ArXiv:0912.5220.

[114] *Split special Lagrangian geometry*, (with R. Harvey), pp. 42-90 in "Metric and Differential Geometry", eds. X. Dai and X. Rong, Progress in Mathematics vol. 297, Birkhäuser Press, Basel, 2012. ArXiv:1007.0450.

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[116] *Gårding's theory of hyperbolic polynomials*, (with R. Harvey), *Communications in Pure and Applied Mathematics* **66** no. 7 (2013), 1102-1128.

[117] *The restriction theorem for fully nonlinear subequations*, (with R. Harvey), Ann. Inst. Fourier, **64** no. 1 (2014), p. 217-265. ArXiv:1101.4850.

[118] *Potential theory on almost complex manifolds*, (with R. Harvey), Ann. Inst. Fourier, Vol. 65 no. 1 (2015), p. 171-210. ArXiv:1107.2584.

[119] *Relative holomorphic cycles and duality*, (with R. Harvey), in preparation.

[120] *p-convexity, p-plurisubharmonicity and the Levi problem* , (with R. Harvey), Indiana Univ. Math. J. **62** No. 1 (2013), 149-169. ArXiv:1111.3895.

[121] *Geometric plurisubharmonicity and convexity - an introduction*, (with R. Harvey), Advances in Math. **230** (2012), 2428-2456. ArXiv:1111.3875.

[122] *Lagrangian plurisubharmonicity and convexity in symplectic geometry*, (with R. Harvey), in preparation.

[123] *Existence, uniqueness and removable singularities for nonlinear partial differential equations in geometry*, (with R. Harvey), pp. 102-156 in "Surveys in Differential Geometry 2013", vol. 18, H.-D. Cao and S.-T. Yau eds., International Press, Somerville, MA, 2013. ArXiv:1303.1117.

[124] *The equivalence of viscosity and distributional subsolutions for convex subequations – the strong Bellman principle*, (with R. Harvey), Bulletin Brazilian Math. Soc. **44** No. 4 (2013), 621-652. ArXiv:1301.4914.

[125] *Removable singularities for nonlinear subequations*, (with R. Harvey), Indiana Univ. Math. J., **63**, No. 5 (2014), 1525-1552. ArXiv:1303.0437.

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[127] *Characterizing the strong maximum principle for constant coefficient subequations*, (with R. Harvey), Rendiconti di Matematica **37** (2016), 63-104. ArXiv:1303.1738.

[128] *The AE Theorem and Addition Theorems for quasi-convex functions*, (with R. Harvey), ArXiv:1309:1770.

[129] *Notes on the differentiation of quasi-convex functions,* (with R. Harvey), ArXiv:1309:1772.

[130] *Tangents to subsolutions – existence and uniqueness, Part I*, (with R. Harvey), Ann. Fac. des Sciences de Toulouse, Mathématiques, Ser. 6, **27** (2018), 777-848. ArXiv:1408.5797.

[131] *Tangents to subsolutions – existence and uniqueness, Part II*, (with R. Harvey), J. Geom. Analysis, **27** (2017), 2190-2223. ArXiv:1408.5851.

[132] *Smooth approximation of plurisubharmonic functions on almost complex manifolds*, (with R. Harvey and S. Plis̀), Math. Ann. **366**, issue 3, (2016), 929-940. ArXiv:1411.7137.

[133] *The Dirichlet problem with prescribed asymptotic singularities*, (with R. Harvey), Advances in Math. **303** (2016), 1319-1357. ArXiv:1508.02962.

[134] *Lagrangian potential theory and a Lagrangian equation of Monge-Amp'ere type*, (with R. Harvey), pp. 217-258 in Surveys in Differential Geometry, edited by H.-D. Cao, J. Li, R. Schoen and S.-T. Yau, vol. 22, International Press, Sommerville, MA, 2018. ArXiv:1712.03525

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