Curriculum Vitae

Name Haynes Robert Miller

Birth January 29, 1948, Princeton, NJ; U.S. Citizen

Education BA, Harvard University, 1970

PhD, Princeton University, 1974

Positions Instructor, Princeton University, 1974–1975

Benjamin Pierce Assistant Professor, Harvard University, 1975–1979 Visiting Assistant Professor, Northwestern University, 1976–1977

Assistant Professor, University of Washington, 1979–1981 Associate Professor, University of Washington, 1981–1984

Visiting Associate Professor, Northwestern University, 1981–1982 Member, Institute for Advanced Study, Princeton, 1982–1983

Professor, University of Washington, 1984 Professor, University of Notre Dame, 1985

Professor, Massachusetts Institute of Technology, 1986–2021

Professor, post-tenure, Massachusetts Institute of Technology, 2021–2022

Professor, emeritus, Massachusetts Institute of Technology, 2022–

Visiting Aarhus University, summer 1979

Positions University of Cambridge, summer 1982

Professeur Associé, Université de Paris VII, February–June 1986

Ordway Professor, University of Minnesota, January 1991

Göttingen University, August 1991 Université de Paris XIII, June 1993

Institut Mittag-Leffler, Djursholm, Sweden, September 1993

Kyoto University, January 1997

Max-Planck-Institut für Mathematik, Bonn, July 1997 Australian National University, Canberra, January 2001 Maître de recherche, Ecole Polytechnique, June 2005

Institut Mittag-Leffler, Djursholm, Sweden, May-June 2006

Center for Symmetry and Deformation, University of Copenhagen, May 2011 Mathematical Sciences Research Institute, Berkeley, January–February 2014

Hausdorff Research Institute for Mathematics, June–July 2015

Editorships Proceedings of the AMS, 1984–1988

Bulletin of the AMS: editor 1993–1999, managing editor 1995–1996,

associate editor 1996–2004

Geometry and Topology, 1996–

Topology and its Applications, 1998–2001

International Mathematical Research Notices, 2000–2004

Mathematische Zeitschrift, 2000–2006

Journal of the American Mathematical Society (Associate Editor), 2006–2012

Journal of the Institute of Mathematics of Jussieu, 2008–2015

International Journal of Research in Undergraduate Mathematics Education, 2014–2025

Journal of Homotopy and Related Structures, 2015–

Tunisian Mathematics Journal, 2017–

Grants NSF Graduate Fellow, 1970–1973

Dodds Fellow, Princeton University, 1973–1974 Harvard Graduate Society Fellow, 1978–1979

Sloan Fellow, 1980–1983

NSF research grants, 1975–2015

MIT d'Arbeloff grant "Computer-aided Teaching of Mathematics," 2001–2006

Cambridge-MIT Institute grant, 2002–2005

MIT Alumni Class Funds grant "Mathematics for Aerospace Engineers," 2002–2003

ACF grant "Explicit Linking of Mathematics," 2004–2005

d'Arbeloff grant "Coordinating the MIT Mathematics GIR Curriculum," 2009–2011

ACF grant "Flash-forward/Flash-back in OpenCourseWare," 2010–2011

NSF grant, "Mathematical Communication Space," 2011–2012

Davis Educational Foundation Grant, "Quantifying Uncertainty," 2012–15

ACF grant "A Module on Laplace Transform," 2014–2015

ACF grant "Crosslinks," 2015-2016

MIT Office of Digital Learning grant to develop 18.03x, 2016–2017

MIT Office of the Vice-provost for International Activities and Office of Digital Learning, "Building a library of Kreyòl based resources for further outreach," 2017–

NSF grant, "2017–2019 Talbot Workshops," 2017–2022

MITx grant to build a Kreyòl version of 18.01, 2017-

MIT J-WEL/pK-12, "An MIT-Haiti Center for Educational Innovation," 2019–2025

NSF grants, "2019–2021 Talbot Workshops on Mathematics Centered

on Algebraic Topology," 2019–2025

NSF grant "Classical Methods in Motivic Homotopy Theory," 2019–2022

MIT Office of the Vice-Provost for International Engagements,

"Third Gathering for Science in Palestine," January, 2020

MIT J-WEL/Higher Education, "MIT-Palestine UROPs," 2021–2024

Awards Cambridge-MIT Institute Fellowship, 2002–2003

Margaret MacVicar Faculty Fellow, 2005–2014

Graduate Student Council Teaching Award, 2006

Fellow of the American Mathematical Society, 2012

Alan J. Lazarus Award for Excellence in Advising, 2021

\mathbf{MIT}

Committee to Study TA Training at MIT, 2002

Committees

Presidential Task Force on the Undergraduate Educational Commons, 2004–2006

Dean for Undergraduate Education Faculty Advisory Committee, 2006–2012

Impact Study Group for the Communication Requirement, 2007

OpenCourseWare Faculty Advisory Committee, 2008–2022

Committee on the Undergraduate Program, 2009–2011

Faculty Advisory Committee to MIT Information Systems and Technology

on Learning Management Systems, 2010

Provost's Working Group on Educational Initiatives, 2010

MITx Task Force on Concepts and Learning Pathways, 2013

MIT-Haiti Initiative, 2013–

Faculty Policy Committee, 2016–2019

Presidential ad hoc committee on the role of OCW, 2016–2017

Higher Education Advisory Group for the Jameel World Education Lab, 2017–2023

Faculty Advisory Committee for J-WEL, 2023–

Advisory Committee for the Global MIT At-risk Fellows Program/Palestine, 2024–

Departmental Service MIT Pure Mathematics Committee, 1987–1995, 2000–2013; Chairman, 1993–1995 Chairman, Education Committee, and Undergraduate Officer, 2004–2013

Associate Head, Department of Mathematics, 2011–2013 Cambridge-MIT Exchange liaison, 2001–2013, 2016–2017.

External Committees

AMS Committee on Summer Institutes and Special Symposia, 1988–1990

AMS Editorial Boards Committee, 1989–1992; Chairman, 1991–1992

AMS ad hoc Committee to Review Membership Publications, 1992–1993

AMS Progress in Mathematics Committee 1992–1993; Chairman, 1993

AMS Committee on Publications, 1993–1995

External Review Committee, Purdue University, March 1996

Executive Committee, Geometry and Topology Publications, 2001–2005

Graduate Program Review Committee, University of California at San Diego, chairman, January 2007

Committee to Visit the Department of Mathematics, Harvard University, chairman, February 2008, March 2011, and November 2013

Northeast Region Judge, Siemens STEM Competition, 2009, '10, '12, '13, '15, '16

Committee to Visit the Department of Computer Science and Mathematical Sciences, University of Toronto, Scarborough, November 2011

MAA MathDL Advsory Board, 2011–2013

Committee to Visit the Department of Mathematics, the Johns Hopkins University, February 2012

Committee to Visit the Department of Mathematics, University of Oregon, February 2012

Technical Advisory Committee for the AAU Undergraduate STEM Education Initiative, August 2012–2021

AMS Committee on Education, 2012–2015

Committee to Visit the Department of Mathematics, Swarthmore College, April 2013

Board of Directors, Math for America/Boston, 2014–2021

TPSE Mathematics Advisory Group, 2014–2024

Bisan Lecture Series steering committee, 2021-

AMS Lecture on Education Selection Committee, 2022–2024; chair, 2022

Review Committee for the Mathematics Department of the Lebanese-American University, November 2024

Conferences co-organized

- Northwestern University Homotopy Theory Conference, 1982 (with S. Priddy)
- Seattle Algebraic Topology Emphasis Year, 1984–1985 (with D. Ravenel)
- Arcata conference on Algebraic Topology, 1986 (with G. Carlsson, R. Cohen, and D. Ravenel)
- Luminy Homotopy Theory Conference, July 1988 (with J.-M. Lemaire, L. Schwartz, and M. Zisman)
- Oberwolfach session, March 1992 (with H.-W. Henn and D. Puppe)
- Cech centennial Homotopy Theory Conference, Northeastern University, June 1993 (with B. Cenkl and M. Hopkins)
- MPI-Bonn Workshop on Algebraic Topology and Stable Homotopy Theory, 1997 (with H.-J. Baues, H.-W. Henn, and M. Mahowald)
- Newton Institute program on New Contexts for Stable Homotopy Theory, 2002 (with J. Greenlees, F. Morel, and V. Snaith)
- Barcelona Conference on Algebraic Topology, June 2002 (with J. Aguadé, C. Broto, M. Castellet, and C. Casacuberta)
- Hanoi Conference and Summer School on Algebraic Topology, August 2004 (with N. Hung, J. Hubbuck, G. Nishida, S. Priddy, L. Schwartz)
- Fields Institute Workshop on Loop Spaces and Elliptic Cohomology, September 2004 (with M. Ando, M. Hopkins, and J. Morava)
- Clay Mathematics Institute Workshop on Homotopy Theoretic Applications of the Goodwillie Calculus, March 2005 (with J. Morava)
- Complex cobordism in homotopy theory: Its impact and prospects, the Johns Hopkins University, March 2007 (with M. Boardman, D. Davis, J. Morava, and D. Pengelley)
- Algebraic Topology, Old and New: the M. M. Postnikov Memorial Conference, Bedlewo, Poland, June 2007 (with A. Pajitnov et al.)
- International Conference on Algebraic Topology, in celebration of the 60th birthday of Jean Lannes, Djerba, Tunisia, October 2007 (with H.-W. Henn, L. Schwartz, and Saïd Zarati)
- The Legacy of Daniel Quillen: K-Theory and Homotopical Algebra, MIT, October 2012 (with C. Barwick and M. Behrens)
- Conference in Algebra and Topology celebrating Lionel Schwartz's sixtieth birthday, Nantes, France, May 2013 (with B. Oliver and J.-C. Thomas)
- Homotopy Theory, Manifolds, and Field Theories, Hausdorff Institute, Bonn, Germany, May–August 2015 (with S. Galatius, S. Schwede, and P. Teichner)
- Scientific Committee for IHES Summer School "Motivic, Equivariant, and Non-commutative Homotopy Theory," 2020 (with E. Friedlander, A. Suslin, and B. Toën)
- International Workshop on Algebraic Topology, SUSTech, Shenzhen, China, June 2018 (with A. Beadry, M. Behrens, Z. Huan, N. Stapleton, G. Wang, Z. Xu, and Y. Zhu)
- Third International Gathering for Science in Palestine, MIT, January 2020 (with F.-J. Ulm and Scientists for Palestine)
- Linguistic Barriers, Exploitation and Resistance in Haiti, MIT, January 2024 (with M. De-Graff)

Graduate Students John Palmieri (PhD, 1991) Matthew Ando (PhD, 1992)

Kevin Kelly (MS, 1993) James Turner (PhD, 1994) Brooke Shipley (PhD, 1995) Gerd Laures (PhD, 1996)

Daniel Christensen (PhD, 1997) Nitya Kitchloo (PhD, 1998)

Andrei Radulescu-Banu (PhD, 1998)

Ioanid Rosu (PhD, 1999)
Jesper Grodal (PhD, 2000)
Donald Yau (PhD, 2002)
Kári Ragnarsson (PhD, 2004)
Hugh Robinson (PhD, 2005)
Michael Ching (PhD, 2005)
Vigleik Angeltveit (PhD, 2006)
Francesca Deserti (MS, 2006)

Peter Lee (PhD, 2008)

Ricardo Andrade (PhD, 2010) Martin Frankland (PhD, 2010) Matthew Gelvin (PhD, 2010) Olga Stroilova (PhD, 2012) Rune Haugseng (PhD, 2013) Geoffroy Horel (PhD, 2013)

Maximilien Holmberg-Péroux (MS, EPFL, 2014)

Michael Andrews (PhD, 2015) Michael Donovan (PhD, 2015) Eva Belmont (PhD, 2018)

Lyuboslav Panchev (PhD, 2019) Robert Hood Chatham (PhD, 2020)

Zhulin Li (PhD, 2021) Andrew Senger (PhD, 2021) Adela YiYu Zhang (PhD, 2023)

Postdoctoral Fellows

Mentored

since 2010

Chris Schommer-Pries, 2010–2012 Vesna Stojanoska, 2011–2014 Marc Hoyois, 2014–2017 Håkon Bergsacker 2014

Sune Reeh, 2014–2017 Zhouli Xu, 2017–2020 Tom Bachmann, 2017–2019 Jeremy Hahn, 2018–2021 Arpon Raksit, 2021–

Selected disciplinary talks

- 1974 Homotopy Theory Conference, Northwestern University
- 1975 Topology Seminar, Princeton University
- 1975 Topology Seminar, University of Pennsylvania
- 1975 Topology Seminar, MIT
- 1976 Homotopy Theory Special Session, Winter AMS meeting, San Antonio
- 1976 Topology Seminar, MIT
- 1976 Midwest Topology Seminar
- 1977 Topology Seminar, University of Washington
- 1978 Colloquium, University of Washington
- 1978 Topology Seminar, University of British Colombia
- 1978 Colloquium, University of Rochester
- 1978 Topology Seminar, Princeton University
- 1978 Topology Seminar, Northwestern University
- 1979 Topology Seminar, University of California, San Diego
- 1979 Ontario Topology Seminar, University of Toronto
- 1979 Colloquium, University of Western Ontario
- 1979 Topology Seminar, Princeton University
- 1979 Topology Seminar, MIT
- 1979 Algebraic Topology Colloquium, Aarhus University
- 1980 Topology Seminar, University of British Colombia
- 1980 Southern California Topology Seminar
- 1981 Homotopy Theory Special Session, Winter AMS meeting, San Francisco
- 1981 Topology Seminar, Berkeley
- 1981 Plenary talk, Oxford Conference, Edinburgh
- 1981 Current Trends in Algebraic Topology, University of Western Ontario
- 1981 Colloquium, University of North Carolina
- 1981 Midwest Topology Seminar, University of Chicago
- 1982 Colloquium, Duke University
- 1982 Colloquium, University of Virginia
- 1982 Topology Seminar, Purdue University
- 1982 Topology Seminar, University of Chicago
- 1982 Plenary lecture at Aarhus Topology Conference
- 1982 Upstate Topology Conference, Syracuse University
- 1982 Homotopy Theory Seminar, Princeton University
- 1982 Colloquium, Johns Hopkins University
- 1983 Topology Seminar, Northwestern University
- 1983 Topology Seminar, Ohio State University
- 1983 Topology Seminar, Princeton University
- 1983 Midwest Topology Seminar
- 1983 Dan Christie Memorial Lecture, Bowdoin College
- 1983 Topology Seminar, Rutgers University
- 1983 Cornell Topology Festival
- 1983 Topology Seminar, MIT
- 1983 Colloquium, University of Minnesota
- 1983 Plenary lecture, Centro del I.P.N. Topology Conference, Tlaxcala

| 1983 | Oberwolfa | ch Session on Homotopy Theory | |
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| 1983 | Plenary lecture at Conference on Topology and Algebraic K-theory, Princeton | | |
| 1983 | Topology Seminar, University of British Colombia | | |
| 1984 | Colloquium, University of Notre Dame | | |
| 1984 | Lecture series, Aarhus University | | |
| 1984 | Colloquium, Reed College | | |
| 1985 | • ' | | |
| 1985 | Lecture Series at L.M.S Conference in Algebric Topology, Durham | | |
| 1985 | Topology Workshop Seminar, University of Warwick | | |
| 1985 | Conference on Homotopy Theory and its Geometric Applications, | | |
| | in honor c | of W.S. Massey, Yale University | |
| 1985 | Colloquium, University of Virginia | | |
| 1985 | Midwest Topology Seminar | | |
| 1985 | Colloquium, Wayne State University | | |
| 1985 | Colloquium, Northwestern University | | |
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| 1986 | | talk at ICM86, Berkeley | |
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| 1986 | · · | | |
| 1987 | _ | m, University of Connecticut | |
| 1987 Lecture Series, University of New Hampshire | | | |
| | 1988 | Plenary address at Homotopy Theory Conference, Northwestern University | |
| April 1988 | | Number Theory Seminar, Brown University | |
| May 1988 | | Plenary address at the JDG Conference, Lehigh | |
| June 1988 | | Conference in honor of Ioan James, Cortona | |
| August 1988 | | Conference in honor of Hirosi Toda, Kinosake | |
| September 1988 October 1993 | | Colleguium Iniv. of Kentucky | |
| | | Colloquium, Univ. of Kentucky | |
| November 1993 November 1993 | | Midwest Topology Seminar, Purdue University Colloquium, Purdue University | |
| June 1994 | | Lecture series at the Summer School on the Steenrod Algebra | |
| June 1334 | | and Compact Lie Groups in Homotopy Theory, Warsaw, Poland | |
| July 1995 | | Lecture series at the EEC-sponsored Workshop on Elliptic | |
| July 1990 | | Cohomology, Barcelona | |
| March | n 1996 | Lecture series at Wayne State University, Detroit | |
| May 1996 | | Conference at the retirement of Albrect Dold and | |
| way 1 | 1000 | Dieter Puppe, Heidelberg, Germany | |
| July 1996 | | Plenary speaker at AMS Summer Institute, Seattle | |
| October 1996 | | Distinguished Visiting Scholar, Western Michigan University | |
| October 1996 | | Midwest Topology Seminar, Western Michigan University | |
| January 1997 | | Lecture series at Kyoto University | |
| March 1997 | | Notre Dame Lectures in Geometry and Topology, | |
| April 1997 | | Princeton University Colloquium | |
| June 1997 | | Arbeitstagung, Bonn, Germany | |
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October 1999 Special session at AMS regional meeting at Austin, Texas December 1999 Homotopy Theory Seminar, Institute for Advanced Study February 2000 Colloquium, Brown University February 2000 Midwest Topology Seminar, University of Chicago March 2000 Homotopy Theory Conference, Johns Hopkins University Workshop in Topology, Melbourne University January 2001 January 2001 Colloquium, Australian National University March 2001 Distinguished Lecture Series, University of Western Ontario **April** 2001 Tercentennial Colloquium, Yale University July 2002 Keynote Speaker, BCAT2002, Barcelona Homotopy Theory Conference in honor of Goro Nishida, Kinosaki, Japan August 2003 Special session on Homotopy Theory, AMS Winter Meeting, Baltimore, MD January 2003 October 2003 Workshop on TMF, Münster, Germany December 2003 Homotopy Theory Conference in honor of Sam Gitler, San Miguel de Allende, Mexico Short course on p compact groups, Hanoi, Vietnam August 2004 October 2004 Midwest Topology Seminar, Purdue University November 2005 Homotopy Theory Conference in Honor of Joe Neisendorfer's 60th Birthday, Montreal June 2006 45 minute address at the annual meeting of the Swedish Mathematical Society, Stockholm September 2006 Colloquium, University of Oslo March 2007 Complex bordism in homotopy theory: its impacts and prospects: Conference in honor of Doug Ravenel and Steve Wilson, Johns Hopkins University April 2007 Graduate Student Topology Conference, University of Chicago August 2007 Joint meeting of the AMS and the Polish Mathematical Society June 2008 Miller Institute Interdisciplinary Symposium, Tomales Bay, CA October 2010 MSRI Hot Topics Workshop on the Kervaire Invariant, Berkeley, CA November 2010 Séminaire Bourbaki report on Kervaire Invariant One May 2011 SYM Lecture, Center for Symmetry and Deformation, University of Copenhagen July 2013 Samuel Eilenberg Centenary Conference, Warsaw November 2013 Connecticut Valley Colloquium, Amherst College July 2014 Conference in Honor of Jean Lannes and Bob Oliver, Paris March 2015 Geometry and Topology: A Conference Honoring Martin Bendersky and Sam Gitler, Princeton, NJ April 2015 Colloquium, Georgia Tech, Atlanta, GA June 2015 Oberseminar, Max Planck Institute for Mathematics, Bonn July 2015 Kepler Lecture, Johannes-Kepler-Research Center for Mathematics, Regensburg November 2016 Colloquium, Vanderbilt University July 2017 Plenary Lecture, Homotopy Theory: Tools and Applications, UIUC

Plenary Lecture, Homotopy Theory in the Ecliptic, Reed College

Zoom lecture, Plectics Laboratories

Workshop on Homotopy Theory, Fields Institute

August 2017

July 2025

November 2024

Selected educational talks and panel participation

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| August 2000 | "Mathematical Visions," Clay Mathematics Institute/PROMYS, Boston University |
| April 2001 | "Teaching and learning about differential equations," at the Bok Center, Harvard University |
| June 2003 | "Knots and Numbers," MIT Science and Engineering Program for Teachers |
| September 2006 | "Some examples of linkage of mathematics and engineering," |
| September 2000 | Workshop on Curriculum Integration, MIT |
| June 2007 | "Knots and Numbers," MIT SEPT |
| March 2009 | Panelist on "Leading a campus to embrace innovation and assessment," The |
| March 2009 | Spencer Foundation Forum on Excellence and Innovation, Harvard Univer- |
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| March 2009 | "Now Directions in Congrel Education at MIT" spangaged by the MacVicer |
| March 2009 | "New Directions in General Education at MIT," sponsored by the MacVicar |
| March 2010 | Fellows Program "The Mathematics Communication-Intensive Webspace," a Crosstalk pre- |
| March 2010 | sentation sponsored by the MIT Office of Educational Technology and In- |
| | novation |
| April 2010 | |
| April 2010 | "Promoting the Use of Instructional Mathlets across the Curriculum," a |
| | Crosstalk presentation sponsored by the MIT Office of Educational Technology and Innovation |
| April 2010 | MIT Office of Educational Innovation and Technology Crosstalk presentation |
| April 2010 | on the Mathematics CI Space (with Susan Ruff) |
| April 2011 | "Innovations in Communication Instruction," sponsored by the Subcommit- |
| April 2011 | tee on the Communication Requirement, MIT |
| January 2012 | "Interactive Applets for Calculus and Differential Equations," an MAA Mini- |
| January 2012 | course at the Boston Joint Mathematics Meetings |
| January 2013 | NSF Workshops on Active Learning, Port-au-Prince, Haiti – also August |
| January 2015 | 2013 and January 2015, and in Limonade, August 2015 and June 2016 |
| February 2013 | Colloquium, Colby College |
| June 2013 | Panelist and presenter at "New Directions for Mathematics Research Expe- |
| June 2015 | riences for Undergraduates," Mt. Holyoke College |
| June 2013 | "Mathlets: A case study of the use of technology in and out of the class- |
| June 2015 | room," MIT SEPT |
| December 2013 | Presenter and panelist at "Pakistan Teachers Education Project," MIT |
| December 2013 | OEIT |
| April 2014 | Marvin I. Freedman Memorial Colloquium, Boston University |
| April 2014 April 2016 | Colloquium, Reed College |
| June 2016 | "Ne ak Nomb," UEH Campus Henri Christophe, Limonade, Haiti |
| June 2016 | "Knots and Numbers," MIT SEPT |
| October 2017 | "Mathematical manipulatives: the MIT Mathlets," with Jennifer French, |
| October 2017 | Electronic Seminar on Mathematics Education |
| June 2019 | "Mathlets: A case study of the use of technology in and out of the class- |
| June 2019 | room," MIT J-WEL Course and Curriculum Design Workshop |
| Sontombor 2010 | Course-based Undergraduate Research Experiences: Two Examples," with |
| September 2019 | Sunil Chebolu, Electronic Seminar on Mathematics Education. |
| December 2019 | "The Electronic Seminar on Mathematics Education: Creating an online |
| December 2019 | community of educators," Canadian Math Society Annual Meeting, Toronto. |
| April 2023 | "Knots and Numbers," Bethlehem University, Bethlehem, Palestine |
| April 2023 | "Knots and Numbers," An-Najah National University, Nablus, Palestine |
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