DONAL O'SHEA

ADMINISTRATIVE POSITIONS

2012-present. President, New College of Florida. Achievements include raising profile of the college, securing funding for growth and new scholarship programs, introducing institution-wide planning, winning funding and approval for the college's first masters program (data science), improving campus appearance, revamping student life to increase retention, beginning regional inter-institutional cooperation, remaking the development office, and diversifying faculty and students.

1998-2012. Dean of Faculty and Vice President for Academic Affairs, Mount Holyoke College. Achievements included diversifying faculty (by 2012, Mount Holyoke had the highest percentage of tenure/tenure-track faculty of color among all COFHE schools), increasing external funding, introducing post-tenure review, bettering leave policies, setting up professional programs, overhauling faculty advising of students, internationalizing curriculum.

ACADEMIC POSITIONS

2012-present. Professor of Mathematics. New College of Florida.

1980-2012. Mathematics faculty member, Mount Holyoke College, various ranks.
Elizabeth T. Kennan Professor of Mathematics 1996-2012. Professor 1991-96. Associate Professor 1986-91. Class of 1926 Assistant Professor 1983-861. Assistant Professor 1980-83. While at Mount Holyoke, I had some part-time administrative positions, including Sponsored Research Officer (1994-1997), Chair of Dept of Mathematics, Statistics and Computer Science (1993-96), and Director of NSF/Five Colleges Regional Institute (1990-93), and I supervised externally funded projects totaling more than $2 million dollars.

Visiting Positions (Academic)
Federal University of Ceara Fortaleza Brazil, Spring 2012
Instititut Henri Poincare and University of Cambridge, Fall 2011
University of Miami, Fall 2004, and University of Edinburgh, Spring 2005.
University of Hawaii Manoa 1997-98 and 1991-92.
Universität Kaiserslautern, Germany 1988-89.
University of Massachusetts at Amherst 1984-85.
Institut des Hautes Etudes Scientifiques, Bures-sur-Yvette, France 1983-84

Other Positions (Administrative)
President: Florida Association of Colleges and Universities, 6/2017-6/2019
President: Southern University Conference 6/2017-6/2018
Co-Founder and Member Exec Committee: Cross-College Alliance 9/2013-2020
Member: Sarasota and Manatee Chambers of Commerce 9/2012-2020
Member: Nominating Committee, American Mathematical Society, 1/2011-12/2013
Member: (and co-founder) Executive Committee, Women's Education Worldwide, 2007-present.
Member: CIC (Council of Independent Colleges) CAO Task Force, 2005-08. (Chair 2007-08.)
Member: ACE (American Council of Education) Internationalization Forum, 2006-08.
Member: Committee on exemplary departments, American Mathematical Society, 2004-07.
Member: Board of directors of Canadian Mathematical Society 1995-99.

Reviewer: Various journals, publishers, proposals (NSF, FIPSE), math depts.
Member (and former chair and co-founder): Valley Geometry Seminar
Member and former chair: Five College Applied Mathematics Group.
Translator for American Mathematical Society Russian Translation Project, 1978-1996.
Editor and translator: Encyclopedia of Math. Sciences (Springer-Verlag).(1986-2007).

EDUCATION
Harvard University, A.B. (Mathematics) 6/74
Queen's University (Canada), M.Sc. (Mathematics) 1/77
Queen's University (Canada), Ph.D. (Mathematics) 1/81

PUBLICATIONS

Books:

The Poincaré Conjecture: In Search of the Shape of the Universe, Walker Books, New York: March, 2007 and in UK by Penguin (April, 2007). Translated into German (S. Fischer), Italian (Rizzoli), French (Dunod), Greek (Travlos), Japanese (Nikkei), Hebrew (Aryeh Nir), Portuguese (Editoria Record), Korean (Kachi), Spanish (Tusquets), Czech (Acdemia), all in 2007, Chinese (Hunan) 2010, Vietnamese 2011, Turkish 2014,
Peano prize, 2008.

with David Cox and John Little, *Using Algebraic Geometry*, New York: Springer, 1998. Japanese Translation, Springer-Verlag Tokyo, 2000. *Second Edition*, 2005.

with J.W. Bruce and MHC Math Department, *Laboratories in Mathematical Experimentation: A Bridge to Higher Mathematics*, New York: Springer Verlag, 1997; *Instructors' Guide*, 1997. Chinese Translation, Chinese Higher Education Press Beijing and Springer-Verlag Berlin Heidelberg, 1998.

with D. Cox and J. Little, *Ideals, Varieties, and Algorithms: An Introduction to Computational Algebraic Geometry and Comutative Algebra*, New York: Springer, 1992. *Second Edition*, 1996. Russian Translation, Mir Moscow, 1998. Japanese Translation, Springer-Verlag Tokyo, 2000. *Third Edition,* 2007. *Fourth Edition*, 2015. Persian translation (2020).

with J. Callahan, D. Cox, K. Hoffman, H. Pollatsek, and L. Senechal, *Calculus in Context* New York: W.H. Freeman, 1995; *Instructors' Manual for Calculus in Context*, 1996.

An Introduction to Dynamical Systems and Mathematical Modelling, Stony Brook: Sloan NLA Monographs, 1992.

An Exposition of Catastrophe Theory and its Applications to Phase Transitions, Kingston: Queen's Papers in Pure and Applied Mathematics, no. 47, 1977 (Second Printing, 1980).

Research articles (mathematics)

(with L. Wilson) Exceptional rays and bilipschitz geometry of real surface singularities. *Topology Appl.* 234 (2018), 359–374.

The bilipschitz geometry of the A_k surface singularities. *J. Singul* **12** (2015) 156–163.

(with L. Birbrair, A. Fernandes, V. Grandjean). Choking horns in lipschitz geometry of complex algebraic varieties. Appendix by W. Neumann. *Journal of Geometric Analysis* 24 , no. 4 **(**2014) 1971-1981.

(with L. Wilson). Limits of tangent spaces to real surfaces. *Amer. J. Math*, **126** (2004) 951-980. http://muse.jhu.edu/journals/american_journal_of_mathematics/v126/126.5oshea.pdf

(with H.D. Tagare, D. Groissser). Non-rigid shape comparison of plane curves in images, *Journal of Mathematical Imaging and Vision*, **16**: Feb (2002) 57-68.

Computing invariants of hypersurface singularities, in S. Sertöz (ed.), *Algebraic Geometry (Ankara 1995)*, pp. 296-347, Marcel-Dekker, 1997.

(with C. Teleman) Limits of tangent spaces and a criterion for μ-constancy, pp. 78-85 in D. Trotman, L. Wilson (eds.) *Stratifications and Topology of Singular Spaces*, Paris: Hermann, 1997.

(with A. Rangarajan and H. Tagare) A geometric criterion for shape-based non-rigid correspondence, *Proceedings International Conference on Computer Vision*, Boston, June, 95, 434-439.

(with L. Wilson) Normal and conormal cones of real surfaces*, Chinese Quarterly Jounal of Mathematics*, vol**. 10**, No. 4, (1995) 62-71.

Limits of tangent spaces: effective computation in singularity theory, pp. 549-573 in D.T.Lê, K. Saito, B. Teissier (eds.), *Singularity Theory*, Cambridge: World Scientific Publishing Co., 1995.

(with L.Wilson), Computing limiting normals to real surfaces, *Proc.Symp.Appl.Math*, **48** (1994) 349-54.

(with P. J. Giblin) The bitangent sphere problem, *Amer. Math. Monthly*, **97**(1990) 5-23.

Spaces of limiting tangent spaces, *Contemp. Math*., **90** (1989) 229-239.

Topologically trivial deformations of isolated quasihomogeneous singularities are equimultiple. *Proc. Amer. Math. Soc*., **101**, no. 2 (1987) 260-2.

The Bernstein-Osserman-Xavier theorem, *Asterisque*, **154** (1987) 95-113.

Elementary catastrophes, phase transitions and singularities, *Math.Modeling*, **7** (1986) 397-411.

Vanishing folds in families of singularities, *Proc. Symp. Pure Math*, **40**, Part 2 (1983) 293-304.

Finite jumps in Milnor number imply vanishing folds, *Proc. Amer. Math. Soc*., **87** (1983) 15-18.

(with A.J. Coleman). The local classification of phase diagrams, *Phys.Rev. B*, **22** (1980) 3428-3442.

Book Chapters and Book Reviews,

"The surprising resolution of the Poincaré conjecture." In D. Rowe, T Sauer, S.A.Walter (eds) *Beyond Einstein: Perspectives on Geometry, Gravitation, and Cosmology*, Einstein Studies 14, Birkhäuser/Springer, New York, 2018, pp. 401–415.

[Review of] "Prime numbers and the Riemann hypothesis", *Notices Amer. Math. Soc*., 63 August (2018) 811-815. https://www.ams.org/journals/notices/201807/rnoti-p811.pdf

(with David Cox and John Little) "The Story of Ideals, Varieties and Algorithms", *Notices Amer. Math. Soc*., 63 July (2016) 626-628.

"Undergraduate research in the mathematics profession" in M.A. Peterson, Y.A.Rubinstein (eds), *Directions for Mathematics Research for Undergraduates*, Singapore: World Scientific (2016) 1-15.

"A review of Perfect Rigor," *Notices Amer. Math. Soc*., **58** Jan. (2011) 56-59. http://www.ams.org/notices/201101/rtx110100056p.pdf

"What Do Mathematicians Do?" (A review of three books.) *Nature*, Oct 25, 2007. http://www.nature.com/nature/journal/v449/n7165/full/449982b.html

"Jacques Hadamard, Pontigny-en-Amerique and creativity in the sciences" in C. Benfey, K. Remmler (eds.), *Artists, Intellectuals, and World War II*, U. Mass. Press, 2006, pp. 185-201.

(with H. Pollatsek) Are Prerequisites Necessary? *Notices of Amer. Math. Soc*., May 1997, 210-221. http://www.ams.org/notices/199705/comm-holyoke.pdf

(with Les Senechal), Student Learning Difficulties and Calculus in Context in M. Artigue and G. Ervynck (eds.), *Proceedings of Working Group 3 on Students' Difficulties in Calculus*, Collège de Sherbrooke, 1993.

Difficultés des étudiantes en calcul différentiel et intégral in *Proceedings ICME-7*, Birkhauser Verlag.

L'analyse et les sciences, *Actes du Colloque sur les Objectifs de l'Enseignement Scientifique, Palaiseau, Avril 1990*}, Soc. Math. de France (1991) 101-113.

Calculus en contexte: un nouveau cours d'introduction a l'analyse, *Gazette des Math*., **48** (1991) 25-29.

(with J. Callahan, D. Cox, K. Hoffman, L. Senechal, F. Wattenberg, Calculus in Context: The Five Colleges, in *Calculus Reform and the First Two Years*}, MAA Notes, 1991.

Summer Mathematics Research at Mount Holyoke College, in *Models for Undergraduate Research*, (ed. L. S. Senechal) MAA notes, 1990.

Mount Holyoke's Laboratory in Mathematical Experimentation, in *Mathematics Curriculum: Towards the Year 2000*}, (ed. J. Malone, H. Burkhardt, C. Keitel), Austin University Press (1989)

Translations of Books:

from Russian (with Dawson), V.I. Arnold and D.V. Anosov, *Dynamical Systems I*, (Encyclopedia of Mathematics, vol 17), Heidelberg: Springer Verlag, 1988.

from Russian: Arkhangelskii and Fedorchuk, *Topology I*, (Encyclopedia of Mathematics, vol 50), Heideberg: Springer Verlag, 1990.

from French: R. Séroul, *Programming for Mathematicians*, Berlin: Springer-Verlag, 2000

Op-eds and Popular Writing:

Monthly since 2017 for both Sarasota Herald-Tribune (www.heraldtribune.com) and SRQ Daily (www.srqmazine.com/SRQ-daily). Occasional pieces have appeared in Inside Higher Ed (www.insidehighered.com), Forbes, Times Higher Ed Supplement, American Scientist.

AWARDS

Queen Elizabeth II Dissertation Fellowship 1978,
NSERC Postdoctoral Research Fellowship 1983-85,
Alexander von Humboldt Fellowship 1986-87,
CAO Service Award 2007, Council of Independent Colleges
Peano Prize 2007. Associazione Subalpina Mathesis.
http://www.associazionesubalpinamathesis.it/2007/12/03/premio-peano-2007/
Unity Award 2014. Sarasota Magazine.
https://www.sarasotamagazine.com/best-of-sarasota/2014/01/the-unity-awards-2
Steele Prize of American Mathematical Society for Exposition.
See http://www.ams.org/news?news_id=2853 and
https://www.ams.org/publications/journals/notices/201604/rnoti-p417.pdf

MEMBERSHIPS

Through New College: American Association of Colleges and Universities, SACSCOC, Florida Association of Colleges and Universities (Board of Directors), State University System (presidents' group), Southern University Conference, Cross-College Alliance (founder), Sarasota and Manatee Chambers of Commerce (director).
Individual memberships: American Mathematical Society, Canadian Mathematical Society, European Mathematical Society, London Mathematical Society, Mathematical Association of America, Société Mathématique de France, and the Society of Industrial and Applied Mathematicians.

PERSONAL AND CONTACT INFORMATION

Personal: Married to Mary O'Shea (neé Barker). four children and ten grandchildren.
Citizenship: US, Canada, Ireland (so EU)
Office Address: President's Office, 5800 Bay Shore Road, Sarasota, FL 34243
Phone: 941-487-4100 (O);
Fax 941-487-4100
Email: **doshea@ncf.edu,** donalboshea@gmail.com