

CURRICULUM VITAE

JAIGYOUNG CHOE

Personal Data

Born in Seoul, Korea in November 27, 1953

Married, two children, four grandchildren

Address and Telephone Numbers

Korea Institute for Advanced Study

Hoegiro 85, Dongdaemungu

Seoul 02455, South Korea

82-2-958-3811 (Office), 82-10-2272-2054 (Mobile)

e-mail address: choe@kias.re.kr

Personal Homepage: <http://newton.kias.re.kr/~choe>

Education

September 1981 - June 1986 Ph.D. in Mathematics, University of California, Berkeley

Thesis Advisor: Richard Schoen

March 1973 - February 1977 Bachelor's Degree in Mathematics at Seoul National

University, Korea

Area of Research

Differential Geometry, Minimal Surface Theory,

Isoperimetric Problems, Geometric Measure Theory

Professional Appointments

January 2020 - December 2022 President, Korea Institute for Advanced Study

August 2019 - September 2019 Professeur Invité, Université de Lorraine, Nancy, France

January 2019 - May 2019 Visiting Scholar, Chinese University of Hong Kong

March 2019 - February 2024 Professor Emeritus, Korea Institute for Advanced Study

March 2006 - February 2019 Professor, Korea Institute for Advanced Study

August 2010 - August 2011 Visiting Professor, Stanford University

August 2002 - July 2003	Visiting Professor, Stanford University
March 1998 - March 2006	Professor, Seoul National University, Seoul, Korea
June 1990 - February 1998	Professor, Postech, Pohang, Korea
May - August 1989	Visiting Professor, Universität Bonn, Germany
July 1988 - June 1990	G.C.Evans Instructor, Rice University, Houston, USA
August 1987 - July 1988	Postdoctoral Fellow, MSRI, Berkeley, USA
October 1986 - July 1987	Postdoctor, UC San Diego, La Jolla, USA
August 1977 - July 1981	Instructor, Korea Naval Academy, Jinhae, Korea

Publication List

- [1] *On the existence and regularity of fundamental domains with least boundary area*, J. Differential Geom. **29** (1989), 623-663.
- [2] *The isoperimetric inequality for a minimal surface with radially connected boundary*, Ann. Scuola Norm. Sup. Pisa (4), **17** (1990), 583-593.
- [3] *Index, vision number, and stability of complete minimal surfaces*, Arch. Rat. Mech. Anal. **109** (1990), 195-212.
- [4] *On the analytic reflection of a minimal surface*, Pacific J. Math. **157** (1993), 29-35.
- [5] *Isoperimetric inequalities on minimal submanifolds of space forms* (with R. Gulliver), Manuscripta Math. **77** (1992), 169-189.
- [6] *The sharp isoperimetric inequality for minimal surfaces with radially connected boundary in hyperbolic space* (with R. Gulliver), Inventiones Math. **109** (1992), 495-503.
- [7] *Sharp isoperimetric inequalities for stationary varifolds and area minimizing flat chains mod k* , Kodai Math. J. **19** (1996), 177-190.
- [8] *Every stationary polyhedral set in R^n is area minimizing under diffeomorphisms*, Pacific J. Math. **175** (1996), 439-446.
- [9] *On the existence of higher dimensional Enneper's surface*, Comment. Math. Helvetici **71** (1996), 556-569.
- [10] *The isoenergy inequality for a harmonic map*, Houston J. Math. **24** (1998), 649-654.
- [11] *Nonexistence of certain complete minimal surfaces with planar ends* (with M. Soret), Comment. Math. Helvetici **75** (2000), 189-199.
- [12] *The isoperimetric inequality for minimal surfaces in a Riemannian manifold*, J. reine angewandte Math. **506** (1999), 205-214.

- [13] *Sufficient conditions for constant mean curvature surfaces to be round*, Math. Ann. **323** (2002), 143-156.
- [14] *Embedded minimal surfaces and total curvature of curves in a manifold* (with R. Gulliver), Math. Res. Letters **10**(2003), 343-362.
- [15] *Relative isoperimetric inequality for domains outside a convex set*, Archives Inequalities Appl. **1** (2003), 241-250.
- [16] *Isoperimetric inequalities of minimal submanifolds*, Global Theory of Minimal Surfaces, Clay Math. Proceedings 2 (2005), 325-369.
- [17] *The relative isoperimetric inequality in Cartan-Hadamard 3-manifolds* (with M. Ritore), J. reine angewandte Math. **605** (2007), 179-191.
- [18] *The double cover relative to a convex set and the relative isoperimetric inequality*, J. Aust. Math. Soc. **80** (2006), 375-382.
- [19] *Total Positive curvature of hypersurfaces with convex boundary* (with M. Ghomi and M. Ritore), J. Diff. Geom. **72** (2006), 129-147.
- [20] *The relative isoperimetric inequality outside a convex domain in R^n* (with M. Ghomi and M. Ritore), Calc. Var. PDE. **29** (2007), 421-429.
- [21] *First eigenvalue of symmetric minimal surfaces in S^3* (with M. Soret), Indiana Univ. Math. J. **58** (2009), 269-282.
- [22] *Capillary surfaces in a convex cone* (with S.-H. Park), Math. Z. **267** (2011), 875-886.
- [23] *Higher dimensional minimal submanifolds generalizing the catenoid and helicoid* (with J. Hoppe), Tohoku Math. J. **65** (2013), 43-55.
- [24] *Density of a minimal submanifold and total curvature of its boundary* (with R. Gulliver), Comm. Anal. Geom **25** (2017), 545-556.
- [25] *Noncommutative minimal surfaces* (with J. Arnlin and J. Hoppe), Lett. Math. Phys. **106** (2016), 1109-1129.
- [26] *New minimal surfaces in S^3 desingularizing the Clifford tori* (with M. Soret), Math. Ann. **364** (2016), 763-776.
- [27] *Stable capillary hypersurfaces in a wedge* (with M. Koiso), Pacific J. Math. **280** (2016), 1-15.
- [28] *On the area of minimal surfaces in a slab* (with B. Daniel), Int. Math. Res. Notices **2016** (2016), 7201-7211.
- [29] *Mean curvature in manifolds with Ricci curvature bounded from below* (with A. Fraser), Comment. Math. Helv. **93** (2018), 55-69.

- [30] *Higher dimensional Schwarz's surfaces and Scherk's surfaces* (with J. Hoppe), *Calc. Var. & PDE* **57** (2018), Article number: 107
- [31] *Characterizing the harmonic manifolds by the eigenfunctions of the Laplacian* (with S. Kim and J. Park), *J. Geom. Phys.* **126** (2018), 22-26.
- [32] *Some minimal submanifolds generalizing the Clifford torus* (with J. Hoppe), *Math. Nach.* **291** (2018), 2536-2542.
- [33] *The minimality of determinantal varieties* (with M. Bordemann and J. Hoppe), *J. reine angew. Math.* **773** (2021), 153-164.
- [34] *The periodic Plateau problem and its application*, arXiv:2104.09087

Invited Talks (outside Korea)

January, 1987	Special Section, AMS meeting at San Antonio
September, 1987	Differential Geometry Seminar, UC Berkeley
December, 1987	Differential Geometry Seminar, UCLA
February, 1988	Differential Geometry Seminar, Brown University
February, 1988	Differential Geometry Seminar, University of Utah
May 12, 1989	Differential Geometry Seminar, University of Utah
June 15, 1989	Differential Geometry Seminar, Bonn University
July 5, 1989	Geometry of minimal submanifolds and related topics, CIRM, Luminy, France
November 9, 1989	Colloquium, University of Minnesota
December 2, 1989	Texas Conference on Topology and Geometry, Austin
December 14, 1989	Differential Geometry Seminar, University of Chicago
September 7, 1991	Workshop on Minimal Surfaces, Universidad de Granada, Spain
October 8, 1991	Differential Geometry Seminar, University of Tokyo
October 9, 1991	Differential Geometry Seminar, Tokyo Metropolitan University
October 13, 1991	Autumn Meeting, Japanese Society of Mathematics, Sapporo
January 6, 1992	Differential Geometry Seminar, University of Utah
January 15, 1992	Differential Geometry Seminar, Stanford University
January 21, 1992	Differential Geometry Seminar, Stanford University
January 23, 1992	Differential Geometry Seminar, University of California, Irvine
July 21, 1993	Conference on Geometry and Global Analysis, Tohoku University
February 14, 1994	Differential Geometry Seminar, Stanford University
December 13, 1994	Pacific Rim Geometry Conference, Singapore

January 17, 1995	Differential Geometry Seminar, Chinese University of Hong Kong
August 1, 1995	Differential Geometry Seminar, Université de Paris 7
January 24, 1996	Differential Geometry Conference, Tokyo Institute of Technology
January 29, 1996	Colloquium, Tohoku University
January 13, 1997	Differential Geometry Seminar, Université de Paris 7
January 30, 1997	Colloquium, Université de Tours
July 16, 1998	Differential Geometry Conference, Chinese University of Hong Kong
July 21, 1998	Differential Geometry Conference, Chinese University of Hong Kong
March 17, 1999	Conference of Japan-America Mathematics Institute, Johns Hopkins University
July 9, 1999	Global Theory of Minimal Surfaces in Flat Spaces, CIME, Martina Franca, Italy
June 6, 2000	Differential Geometry Seminar, Bonn University
October 26, 2000	GANG Seminar, University of Massachusetts
December 13, 2000	AMS-HKMS Conference, Hong Kong Baptist University
July 10, 2001	The Global Theory of Minimal Surfaces, MSRI, Berkeley
February 4,5,6, 2002	Journées du GDR 0677, Université de Tours
February 18, 2002	Differential Geometry Seminar, Université de Paris 7
October 2, 2002	Differential Geometry Seminar, Stanford University
December 18, 2002	Pacific Rim Geometry Conference, Chinese University of Hong Kong
February 19, 2003	Topology Seminar, University of California, Berkeley
March 27, 2003	Differential Geometry Seminar, University of Minnesota
April 5, 2003	Applications of Teichmüller Theory, AMS Sectional Meeting, Bloomington
April 21, 2003	Analysis Seminar, Cornell University
April 23, 2003	Differential Geometry Seminar, Stanford University
May 13, 2003	Differential Geometry Seminar, University of California, Irvine
July 20-30, 2004	Series of Special Lectures for Graduate Students, Beijing University
June 20, 2005	Conference on Calculus of Variations and Nonlinear PDE, Zhejiang University
July 20, 2005	4th Asian Mathematical Conference, National University of Singapore
August 17, 2005	Differential Geometry Seminar, Rice University
August 22-25, 2005	Karcher Special Lectures, University of Oklahoma
February 17, 2006	Colloquium, Tohoku University
February 20, 2006	SNU-RIMS Joint Symposium, Kyoto University
September 6, 2006	Special Geometry Seminar, Stanford University
September 13, 2006	Workshop on Geometric Flows and Function Theory, MSRI
September 20, 2006	PDE Seminar, University of Minnesota

March 2, 2007	Geometry Seminar, Université de Tours
March 5, 2007	Geometry Seminar, Université de Paris 7
March 21, 2007	Geometry Seminar, Universidad de Granada
March 28, 2007	Colloquium, Universidad de Granada
August 24, 2007	International Congress on Minimal and CMC Surfaces, IMPA
December 9, 2007	Workshop on Minimal Submanifolds and Related Topics, BIRS
December 20, 2007	The Fourth International Congress of Chinese Mathematicians, Hangzhou
May 30, 2008	Recent Advances in Geometry of Submanifolds, Università di Roma
June 16, 2008	Differential Geometry Seminar, Université de Paris 7
July 1, 2008	Conformal Geometry, CIRM, Roscoff
December 11, 2008	The Ninth Pacific Rim Geometry Conference, National Taiwan University
July 2, 2009	Conference on Variational Problems, Nara Women's University
July 6, 2009	Geometry Seminar, Osaka University
October 12, 2009	Geometry Seminar, Kungliga Tekniska Högskolan (Stockholm)
May 14, 2010	Geometry Seminar, Rice University
June 21, 2010	Geometry Seminar, Université de Paris 7
October 25, 2010	Diff. Geom., Math. Physics, PDE Seminar, University of British Columbia
November 10, 2010	Geometry Seminar, Stanford University
November 30, 2010	Colloquium, University of California, Santa Cruz
February 5, 2011	Bay Area Differential Geometry Seminar, San Francisco State University
March 29, 2011	Diff. Geom./Symplectic Topology Seminar, University of Minnesota
March 31, 2011	Colloquium, University of Minnesota
April 14, 2011	Colloquium, University of Utah
December 7, 2011	The 10th Pacific Rim Geometry Conference 2011 Osaka-Fukuoka
December 15, 2011	International Conference on Integral and Convex Geometric Analysis, Chern Institute
April 30, 2012	Colloquium, National Taiwan University
September 17, 2012	MSJ-KMS Joint Meeting 2012, Fukuoka
January 7, 2013	The third Conference of Tsinghua Sanya International Mathematics Forum
March 28, 2013	Colloquium, Tsinghua University
March 29, 2013	Geometry Seminar, Tsinghua University
April 3, 2013	Geometry Seminar, Beijing Normal University
August 5, 2013	Geometry Seminar, Kyushu University
August 8, 2013	International Workshop on Special Geometry and Minimal Submanifolds, Tohoku Univ.
August 29, 2013	Workshop on Minimal Submanifolds and Related Topics, Hannover University

December 16, 2013	Geometric Variational Problems, BIRS
March 6, 2014	Progress of Geometric Structures on Manifolds, Meijo University, Japan
March 30, 2014	GAIA-IF Workshop, University Joseph Fourier, Grenoble
July 23, 2014	AMSI/AustMS Conference on Geometric Analysis, University of Queensland, Brisbane
November 20, 2014	Submanifolds in Yuzawa 2014, Japan
December 9, 2014	Mini Workshop on Differential Geometry, Chinese University of Hong Kong
February 23, 2015	Differential Geometry Seminar, UC Irvine
March 24, 2015	Diff Geom, Math Physics, PDE Seminar, University of British Columbia, Canada
July 16, 2015	Differential Geometry Seminar, Imperial College, London
December 2, 2015	IMS Geometric Analysis Seminar, Chinese University of Hong Kong
December 14, 2015	Geometric Aspects on Capillary Problems and Related Topics, University of Granada
December 18, 2015	Topics in Geometric Analysis, Free University, Berlin
June 13, 2016	Aspects of Membrane Dynamics, KTH, Stockholm
June 23, 2016	Workshop on Geometric Analysis, Chinese University of Hong Kong
June 30, 2016	The 7th Pacific Rim Conference on Mathematics 2016, SNU, Seoul
November 24, 2016	Geometric Inequalities on Riemannian Manifolds and Related Topics, Busan
December 5, 2016	60th Annual Australian Mathematical Society Meeting, Canberra
December 11, 2016	Nonlinear and Geometric PDE's, Australian National University, Kioloa
December 30, 2016	2016 NCTS Workshop on Geometric Analysis, National Taiwan University
March 21, 2017	VII Workshop on Differential Geometry, Maceió, Brazil
March 28, 2017	Differential Geometry Seminar, IMPA, Rio de Janeiro
January 11, 2018	Geometry of Moduli Space of Low Dimensional Manifolds, RIMS, Kyoto
January 13, 2018	Workshop on Geometric Analysis and General Relativity, CUHK, Hong Kong
November 5, 2018	Workshop on Mean Curvature and Regularity, IAS, Princeton
Feb27,Mar13,27,2019	Geometric Analysis Seminar, CUHK, Hong Kong
May 18, 2019	Taiwan Geometry Symposium, National Tsing Hua University, Taiwan
September 9, 2019	Séminaire de géométrie différentielle, Université de Lorraine, Nancy
September 16, 2019	Séminaire de géométrie, Université de Paris 7
February 3, 2020	Mini-symposium: Nonlinear Geometric PDE's, OIST, Okinawa
June 1, 2021	Geometric Analysis Seminar, University of Chicago (online)
July 2, 2021	The 23rd International Differential Geometry Workshop, RIRCM-OCAMI, Osaka (online)
February 14-16, 2022	Symmetry and Stability in Differential Geometry of Surfaces, RIMS (online)
March 22-24, 2022	Workshop in Celebration of Professor M. Koiso's Retirement, Kyushu University (online)