

# CURRICULUM VITA

**Xiaojun Huang**

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## I. GENERAL INFORMATION

**Citizenship:** U.S.A.

**Phone Number:** 848 445 6796 (office); 732-445-5530 (fax).

**Education:** Ph.D. in Mathematics, Washington University, August, 1994.

## II. PROFESSIONAL EXPERIENCES:

### 1. Regular Position:

- L. E. Dickson Instructor of Mathematics, The University of Chicago, 1994- 1997.
- Postdoctoral Fellow, Mathematical Sciences Research Institute at Berkeley, 1995- 1996.
- Tenure-track Assistant Professor, Rutgers University at New Brunswick, 1997- 2000.
- Associate Professor of Mathematics, Rutgers University at New Brunswick, 2000-2005.
- Professor of Mathematics, Rutgers University at New Brunswick, 2005-June, 2012.
- Distinguished Professor of Mathematics, Rutgers University at New Brunswick, July, 2012-Present.

### 2. NSF Research and Conference Grant Awards

- Awardee of the NSF Research Grant DMS-2247151, June, 2023-May, 2026. *Proposal title: Function Theory of Several Complex Variables.* **(Supported in the highly recommended for funding category—the top 10% category)**
- Awardee of the NSF Research Grant DMS-2000050, June, 2020-May, 2023. *Proposal title: Function Theory of Several Complex Variables.* **(Supported in the highly recommended for funding category)**
- Awardee of the NSF Research Grant DMS-1665412, June, 2017-May, 2020. *Proposal title: Function Theory of Several Complex Variables.* **(Supported in the highly recommended for funding category)**
- Awardee of the NSF Grant-1363418, June 1, 2014- May 31, 2017. *Proposal title: Function Theory of Several Complex Variables.* **(Supported in the highly recommended for funding category)**

- Awardee of the NSF Grant-1101481, June, 2011-May 31, 2014. *Proposal title: Function Theory of Several Complex Variables.* (**Supported in the highly recommended for funding category**)
- Awardee of the NSF Grant-0801056, June, 2008 - July, 2011. *Proposal title: Function Theory of Several Complex Variables.* (**Supported in the highly recommended for funding category**).
- Awardee of the NSF Grant-0500626, June, 2005 - July, 2008. *Proposal title: Function Theory of Several Complex Variables.*
- Awardee of the NSF Grant-0200689, June, 2002 - June, 2005. *Proposal title: Function Theory of Several Complex Variables.*
- Awardee of the NSF Grant-9970439, June, 1999 - June, 2002. *Proposal title: Function Theory of Several Complex Variables.* (**Supported in the highly recommended for funding category**)
- Awardee of the NSF Grant-9627423, September, 1996 - June, 1999. *Proposal title: On Several Problems in Several Complex Variables.*
- Awardee of the NSF Grant-9500881, July, 1995- July, 1997. *Proposal title: Function Theory of Several Complex Variables.*
- Awardee of the NSF Conference Grant-0901662, April 2009- April 2010.
- Co-Principal Investigator of the NSF Conference Grant-1203845, May 2012- May 2013.

### **3: Prizes, Awards and Some Recent Key Invited Addresses**

- Recipient of the 2013 Stefan Bergman Prize by the American Mathematical Society (jointly with Steve Zelditch).
- Fellow of the American Mathematical Society (Class 2013).
- AMS invited address at the Fall 2013 Sectional Meeting, Philadelphia, PA, USA, October 12-13, 2013.
- Invited plenary address at the 29th Biannual Brazilian Mathematics Colloquium, IMPA, Brazil, July 22– August 2, 2013.
- Invited address at the 2013 Abel Symposium sponsored by the Norwegian Mathematical Society, Trondheim, Norway, July 2-5, 2013.
- Presenter of the Roever Lectures of 2015 in Mathematics, Washington University, April, 2015.
- Presenter of the Monroe Martin Lectures of 2017 in Mathematics, Johns Hopkins University, April, 2017.
- The 2020 Chair Montel from Laboratoire Dieudonné, University of Nice, France.
- Scholarly Excellence Award from the Board of Trustee of Rutgers University, 2000.
- Teaching Award from the Provost of the University of Chicago in 1995.

### III. PUBLICATIONS

#### 1. Articles published or accepted in the refereed journals

- [1] Xiaojun Huang and Xiaoshan Li, Extension of multi-valued holomorphic functions on a Stein space, *Math. Ann.*, to appear.  
(<https://link.springer.com/article/10.1007/s00208-022-02517-2>)
- [2] Xiaojun Huang and Xieping Wang, Complex geodesics and complex Monge-Ampère equations with boundary singularity, *Math. Ann.*, 382 (2022), no. 3-4, 1825-1864.
- [3] Xiaojun Huang, Jun Lu, Xiaomin Tang and Ming Xiao, Proper mappings between indefinite hyperbolic spaces and type I classical domains, *Trans. Amer. Math. Soc.*, <https://doi.org/10.1090/tran/8618>.
- [4] Xiaojun Huang and Ming Xiao, Rigidity of mappings between degenerate and indefinite hyperbolic spaces, *Jour. Geom. Analysis*, to appear. (A special issue to the memory of N. Sibony)
- [5] Xiaojun Huang and Ming Xiao, Holomorphic mappings between hyperquadrics with positive signature (with M. Xiao), *Pure Appl. Math. Q.* 18 (2022), no. 2, 599-616. (A special issue to J. Kohn on his 90th birthday)
- [6] Xiaojun Huang and Ming Xiao, Bergman-Einstein metrics, a generalization of Kerner's theorem and Stein spaces with spherical boundaries, *J. Reine Angew. Math.* 770 (2021), 183-203.
- [7] Xiaojun Huang and Wanke Yin, Regular types and the Bloom conjecture, *J. Math. Pures Appl.* (9) 146 (2021), 69-98.
- [8] Xiaojun Huang, Revisiting a non-degeneracy property for extremal mappings, *Acta Math. Sci. Ser. B* (Engl. Ed.) 41 (2021), no. 6, 1829-1838. (A special issue to the memory of J. Yu)
- [9] Xiaojun Huang, Jun Lu, Xiaoming Tang and Ming Xiao, Boundary characterization of holomorphic isometric embeddings between indefinite hyperbolic spaces, *Adv. Math.* 374 (2020), 107388, 37 pp.
- [10] Xiaojun Huang and Ming Xiao, A uniformization theorem for Stein spaces (with M. Xiao), *Complex Anal. Synerg.* 6 (2020), no. 2, Paper No. 6, 5 pp. (A special issue to the memory of N. Hanges)

- [11] Huang, Xiaojun; Lu, Jin; Tang, Xiaomin; Xiao, Ming Boundary characterization of holomorphic isometric embeddings between indefinite hyperbolic spaces, *Adv. Math.* 374 (2020), 107388, 37 pp.
- [12] Hanglong Fang, Xiaojun Huang and Ming Xiao, Volume-preserving maps between Hermitian symmetric spaces of compact type, *Advances in Mathematics* 360 (2020). (74 pages)
- [13] Hanglong Fang and Xiaojun Huang, Flattening a non-degenerate CR singular point of real codimension two, *Geometric and Functional Analysis* April 2018, Volume 28, Issue 2, pp 289-333.
- [14] Xiaojun Huang and Wanke Yin, Flattening of CR singular points and analyticity of the local hull of holomorphy II, *Advances in Mathematics* 308 (2017), 1009-1073.
- [15] Xiaojun Huang and Ming Xiao, Chern-Moser-Weyl Tensor and Embeddings into Hyperquadrics, *Harmonic Analysis, partial differential equations*, 79-95, Appl. Numer. Harmon. Anal., Birkhäuser/Springer, Cham, 2017.
- [16] Xiaojun Huang and Wanke Yin, Flattening of CR singular points and analyticity of the local hull of holomorphy I, *Mathematische Annalen* 365 (2016), no. 1-2, 381-399.
- [17] Xiaojun Huang, Shanyu Ji and Wanke Yin, Mapping  $\mathbb{B}^n$  into  $\mathbb{B}^{3n-3}$ , *Comm. Anal. Geom.* 24 (2016), no. 2, 279-300.
- [18] Xiaojun Huang, Yuan Yuan, Submanifolds of Hermitian symmetric spaces, Springer Proceeding of Mathematics and Statistics in the memory of Salah Baouendi, 2015.
- [19] Xiaojun Huang, Yuan Zhang, On the CR transversality of holomorphic maps into hyperquadrics, Abel Symposia, dedicated to Professor Yum-Tong Siu on the occasion of his 70th birthday, 2015.
- [20] Xiaojun Huang, Xiaoshan Li and Ming Xiao, Non-embeddability into a fixed sphere for a family of compact real algebraic hypersurfaces, *Int. Math. Res. Not.(IMRN)* 16 (2015), 7382-7393.
- [21] Xiaojun Huang and Xiaoshan Li, The mixed boundary problem for the  $\bar{\partial}$ -equation on a lunar domain, *Transactions of Amer. Math. Soc.* 368 (2016), 6915-6937.

- [22] Xiaojun Huang and Yuan Yuan, Holomorphic isometry from a Kähler manifold into a product of complex projective manifolds, *Geometric and Functional Analysis*, Vol24-3 (2014), 854-886.
- [23] Xiaojun Huang and Shanyu Ji and Brandon Lee, CR and Holomorphic Embeddings and Pseudo-conformally Flat Kähler Metrics, *Journal of Geometric Analysis*, October 2014, Volume 24, Issue 4, pp 1912-1928.
- [24] Xiaojun Huang, Shanyu Ji and Wanke Yin, On the third gap for proper holomorphic maps between balls, *Math. Ann.*, Volume 358, Issue 1-2, pp 115-142, 2014.
- [25] Xiaojun Huang and Dima Zaitsev, Non-embeddable real algebraic hypersurfaces, *Math. Z.* Volume 275, Issue 3-4, pp 657-671, December 2013.
- [26] Xiaojun Huang and Yuan Zhang, Chern-Moser-Weyl tensor and a CR transversality problem, *Journal of Geometric Analysis*, Vol. 23 issue 4 October 2013, 1780 - 1793.
- [27] Xiaojun Huang and Xiaoshan Li, On a theorem of Calabi, *Illinois Journal of Mathematics* Volume 56, Number 1 (2012), 95-99.
- [28] S. Baouendi, P. Ebenfelt and Xiaojun Huang, Holomorphic maps between hyperquadrics with small difference in signature, *American Journal of Mathematics* 133, December 2011, 1633-1661.
- [29] Xiaojun Huang and Wanke Yin, On the equivalence problem for Bishop surfaces, *Science in China* 53 (2010), no. 3, 687-700. (A special issue in honor of Professor L. Yang).
- [30] J. Faran, Xiaojun Huang, Shanyu Ji and Y. Zhang, A criterion for a rational map to be equivalent to a polynomial map, *Pure and Applied Mathematics Quarterly* Volume 6, Number 3 (Special Issue: In honor of Joseph J. Kohn) 829-842, 2010.
- [31] Xiaojun Huang and Wanke Yin, A codimension two CR singular submanifold that is formally equivalent to a symmetric quadric, *Int. Math. Res. Not.* 2009, no. 15, 2789-2828.
- [32] Xiaojun Huang and Wanke Yin, A Bishop surface with a vanishing Bishop invariant, *Invent. Math.* 176 (2009), no. 3, 461-520.
- [33] Xiaojun Huang and Yuan Zhang, Monotonicity for the Chern-Moser-Weyl curvature tensor and CR embeddings, *Science in China Series A: Mathematics* Dec., 2009, Vol. 52, No. 12, 2617-2627. (Special Issue: In honor of Tongde-Zhong on the occasion of his 80th birthday.)

- [34] S. Baouendi, P. Ebenfelt and Xiaojun Huang, Super-rigidity for CR embeddings of real hypersurfaces into hyperquadrics, *Advances in Math.* 219, no. 5, 1427–1445, 2008.
- [35] Xiaojun Huang and Shanyu Ji, On the CR umbilical points on real ellipsoids in complex two-spaces, *Transactions of American Mathematical Society* (359) No.3, 1191-1204, 2007.
- [36] Xiaojun Huang, On the isolated complex singularities and their CR links, *Sciences in China* Vol 49 (11), 1441-1450, 2006.
- [37] Xiaojun Huang, S. Ji and Dekang Xu, A new gap phenomenon for proper holomorphic maps from  $\mathbf{B}^n$  into  $\mathbf{B}^N$ , *Math. Res. Letts.* Vol 13, 515-529, 2006.
- [38] Xiaojun Huang, S. Luk and S. S. T. Yau, On a CR family of compact strongly pseudoconvex CR manifolds, *Jour. of Diff. Geom.* Vol. 72, 353-379, 2006.
- [39] S. M. Baouendi and Xiaojun Huang, Super-rigidity for holomorphic mappings between hyperquadrics with positive signatures, *Jour. of Diff. Geom.* Vol. 69, 379-398, 2005.
- [40] P. Ebenfelt, Xiaojun Huang and D. Zaitsev, The equivalence problem and rigidity for hypersurfaces embedded into hyperquadrics, *American Jour. of Math.* Vol 127, 129-168, 2005.
- [41] Xiaojun Huang, S. Ji and D. Xu, several results for holomorphic mappings from  $\mathbf{B}^n$  into  $\mathbf{B}^N$ , *Contemporary Math.*, a special issue in honor of F. Trèves, 267-293, 2005.
- [42] P. Ebenfelt, Xiaojun Huang and D. Zaitsev, Rigidity of CR-immersions into spheres, *Comm. in Analysis and Geometry* Vol 12 (No. 3), 629-668, 2004.
- [43] Xiaojun Huang, On a semi-linearity property for holomorphic maps, *Asian Jour. of Math.* Vol 7, No. 4, 463-492, 2003.( A special issue in honor of Professor Y-T Siu's 60th birthday).
- [44] Xiaojun Huang, H. S. Luk and S. S. T. Yau, Punctured local holomorphic De Rham Cohomology, *Jour. of the Japanese Math. Soc.* 55 (2003), 633-640.
- [45] Xiaojun Huang and Shanyu Ji, Cartan-Chern-Moser theory on algebraic hypersurfaces and an application to the study of automorphism groups of algebraic domains, *Annales. de L'Inst. Fourier* 52 (2002), 1793-1831.
- [46] Xiaojun Huang and Shanyu Ji, Mapping  $\mathbf{B}^n$  into  $\mathbf{B}^{2n-1}$ , *Invent Math.* 145 (2), 219-250, 2001.

- [47] Xiaojun Huang, Shanyu Ji and S. S. T. Yau, An example of a real analytic strongly pseudoconvex hypersurface which is not holomorphically equivalent to any algebraic hypersurfaces, *Arkiv for Math* 39, 2001, 75-93.
- [48] Xiaojun Huang and P. Ebenfelt, On a generalized reflection principle in 2-spaces, *Complex Analysis and Geometry*, Ohio State Univ. Math. Res. Publ. 9, Walter De Gruyter, 2001, 125-140.
- [49] Xiaojun Huang, A removable singularity property for CR mappings between real analytic hypersurfaces, *Comm in Partial Differential Equations* 25, 299-317 (2000).
- [50] Xiaojun Huang, J. Merker and F. Meylan, Mappings between degenerate real analytic hypersurfaces in  $\mathbf{C}^n$ , *Contemporary Math.* 251, 321-338 (2000).
- [51] Xiaojun Huang, On a linearity problem of proper holomorphic maps between balls in complex spaces of different dimensions, *Jour. of Diff. Geom.* 51 (No. 1), 13-33 (1999)
- [52] Xiaojun Huang and Shanyu Ji, Global holomorphic extension of a local map and a Riemann mapping theorem for algebraic domains, *Mathematical Research Letters* 5, 247-260 (1998).
- [53] Xiaojun Huang, On an  $n$ -manifold in  $\mathbf{C}^n$  near an elliptic complex tangent, *Jour. of the Amer. Math. Soc.*, Vol 11 (3), 669-692 (1998).
- [54] Xiaojun Huang, Schwarz reflection principle in complex spaces of dimension two, *Comm. in PDE* (21), 1781-1828 (1996).
- [55] M. S. Baouendi, Xiaojun Huang and L. Rothschild, Regularity of CR mappings between algebraic hypersurfaces, *Invent. Math.* 125 (1996), 13-36.
- [56] Xiaojun Huang and Yifei Pan, A remark on the holomorphic proper self mappings of domains in  $\mathbf{C}^n$ , *Complex Variables* 31(1996), 81-85.
- [57] Xiaojun Huang and Yifei Pan, Proper holomorphic mappings between real analytic domains in  $\mathbf{C}^n$ , *Duke Math. J.* 82 (1996), 437-446.
- [58] Xiaojun Huang and Steve Krantz, On a problem of Moser, *Duke Math. J.*, Vol 78 (1995), 213-228.
- [59] M. S. Baouendi, Xiaojun Huang and L. Rothschild, Non-vanishing of the differential of holomorphic mappings at boundary points, *Math. Res. Lett.* 2 (1995), 737-751.

- [60] Xiaojun Huang, A rigidity problem for holomorphic mappings on a class of weakly pseudoconvex domains, *Canadian J. of Math.*, Vol 47 (1995), 405-420.
- [61] Xiaojun Huang, S. Krantz, D. Ma and Yifei Pan, A localized Hopf lemma for holomorphic functions, *Complex Variables* 26 (1995), 273-276.
- [62] Xiaojun Huang, On the mapping problem for algebraic real hypersurfaces in complex spaces of different dimensions, *Annales de L'Institut Fourier* 44 (1994), 433-463.
- [63] Xiaojun Huang, A non-degeneracy property of extremal mappings and iterates of holomorphic self-mappings, *Annali Scuola Norm. Sup. Pisa, Serie IV. Vol. XXI* (1994), 399-419.
- [64] Xiaojun Huang, A preservation principle of extremal mappings near a strongly pseudoconvex point and its applications, *Illinois J. of Math.* 38 (1994), 283-303.
- [65] Xiaojun Huang and Steve Krantz, A unique continuation problem for holomorphic mappings, *Comm in Part. Diff. Equ.* 18 (1993), 241-263.
- [66] Xiaojun Huang and Yifei Pan, Proper holomorphic self-mappings of Hartogs domains in  $\mathbf{C}^2$ , *Michigan Math. J.* 40 (1993), 211-217.
- [67] Xiaojun Huang, Some applications of Bell's theorem to weakly pseudoconvex domains, *Pacific J. of Math.* 158 (1993), 305-315.

### **Research Papers in Fracture Mechanics**

- [68] Xiaojun Huang, The mathematical model for composite materials with a crack in their interface, *Acta Mathematica Scientia*, The first special issue of 1992, (S1 1992).
- [69] Xiaojun Huang, Stress distributions for two dissimilar half planes welding along their boundary with periodic cracks in their interface, *Journal of Nanjing University of Aeronautics & Astronautics*, the third issue of 1987.
- [70] Xiaojun Huang, On the stress distribution in bonded dissimilar materials with cracks along a circular interface. *J. Wuhan Univ. Natur. Sci. Ed.*, 1987, no. 4, 25-30.

### **2. Published conference proceedings, lecture notes**

- [71] Xiaojun Huang, Shanyu Ji and Wanke Yin, Recent Progress on Two Problems in Several Complex Variables, *Proceedings of the 4th International Congress of Chinese Mathematicians* (Vol 1), 563-576, December, 2007.



- [72] Xiaojun Huang and Shanyu Ji, On some rigidity problems in Cauchy-Riemann Geometry, Proceeding on the 10th Anniversary of the Mathematical Institute in the East China Normal University, AMS/IP Studies in Advanced Mathematics, Volume 39, 89-107, 2007.
- [73] Xiaojun Huang, Lectures on the Local Equivalence Problems for Real Submanifolds in Complex Manifolds, Lecture Notes in Mathematics 1848 (C.I.M.E. Subseries), Springer-Verlag, 2004, 109-163.
- [74] Xiaojun Huang, On some problems in several complex variables and CR geometry, Proceedings of the first ICCM (edited by L. Yang and S. T. Yau), AMS/IP Stud. Adv. Math. 20, 383-396, 2001.

## **2. Books in preparation for publication**

- [75] Xiaojun Huang, Topics in Complex Analysis of One Variables.
- [76] Xiaojun Huang, Subelliptic Analysis in Complex Analysis and Geometry.