

Curriculum Vitae

Jiří Lebl

DEPARTMENT OF MATHEMATICS, OKLAHOMA STATE UNIVERSITY, STILLWATER, OK 74078, USA

Email: lebl@okstate.edu, Web: <https://math.okstate.edu/people/lebl/>

Education:

PhD in Mathematics, Spring 2007, University of California, San Diego (UCSD)

Advisor: Prof. Peter Ebenfelt Thesis: *Singularities and Complexity in CR Geometry*

BA (Spring 2001) and MA (Spring 2003) in Mathematics, San Diego State University (SDSU)

Employment:

2023–present Professor, *Oklahoma State University (OSU)*

2018–2023 Associate Professor, *Oklahoma State University (OSU)*

2020–2021 Teaching Visitor (sabbatical visit), *University of California, San Diego (UCSD)*

2013–2018 Assistant Professor (tenure-track), *Oklahoma State University (OSU)*

2011–2013 Van Vleck Visiting Assistant Professor, *University of Wisconsin–Madison (UW–Madison)*

2010–2011 Teaching Visitor, *University of California, San Diego (UCSD)*

2007–2013 J. L. Doob Research Assistant Professor ('07–'10) / Adjunct Assistant Professor ('10–'13)
University of Illinois at Urbana–Champaign (UIUC)

2004–2007 Teaching Assistant, *University of California, San Diego (UCSD)*

2003 Programmer, *Red Hat, Inc.*, Raleigh, NC

2002 Teaching Assistant in Mathematics, *San Diego State University (SDSU)*

2000–2001 Programmer, *Eazel, Inc.*, Mountain View, CA

1999 Programmer/Consultant, *Spyder, Inc.*, San Diego, CA

1996–1998 Programmer/Consultant, *Trega, Inc.*, San Diego, CA

Grants:

2020–2025: PI on Simons Foundation collaboration grant 710294, *CR Functions and Singularities* (\$42,000).

2014–2018: PI on NSF grant DMS-1362337, *Complexity in CR Geometry* (\$141,000).

2009–2013: PI on NSF grant DMS-0900885, *Singularities and Complexity in CR Geometry* (\$99,898).

Oklahoma State University Fiscal Year 2016 Dean's Incentive Grant (\$3000).

Oklahoma State University Fiscal Year 2015 Dean's Incentive Grant (\$3000).

Oklahoma State University Fiscal Year 2015 Arts and Sciences Summer Research Grant (\$8000).

Publications and Preprints:

- [47] Dusty Grundmeier, Jiří Lebl, *Rational maps of balls and their associated groups*, to appear in São Paulo J. Math. Sci. (published online), preprint [arXiv:2402.03152](https://arxiv.org/abs/2402.03152).
- [46] Abdullah Al Helal, Jiří Lebl, Achinta Kumar Nandi, *Proper maps of ball complements & differences and rational sphere maps*, preprint [arXiv:2401.06364](https://arxiv.org/abs/2401.06364).
- [45] Jiří Lebl, Luka Mernik, *On Segre-degenerate Levi-flat hypervarieties*, to appear in Ark. Mat., preprint [arXiv:2306.07259](https://arxiv.org/abs/2306.07259).
- [44] Jiří Lebl, *Exhaustion functions and normal forms for proper maps of balls*, to appear in Math. Ann. (published online), preprint [arXiv:2212.06102](https://arxiv.org/abs/2212.06102).
- [43] John P. D'Angelo, Jiří Lebl, *Integer sequences and output arrays*, preprint [arXiv:2208.09544](https://arxiv.org/abs/2208.09544).
- [42] Jiří Lebl, Alan Noell, Sivaguru Ravisankar, *Cartan uniqueness theorem on nonopen sets*, Complex Anal. Synerg., **8** (2022), Paper No. 17, [MR 4476930](https://doi.org/10.1007/s40304-022-00476-3), [arXiv:2112.07585](https://arxiv.org/abs/2112.07585).
- [41] Jiří Lebl, Asif Shakeel, *Variational Quantum Algorithms for Euclidean Discrepancy and Covariate-Balancing*, preprint [arXiv:2103.09090](https://arxiv.org/abs/2103.09090).
- [40] Jiří Lebl, *Segre-Degenerate Points Form a Semianalytic Set*, Proc. Amer. Math. Soc. Ser. B, **9** (2022), 159–173, [MR 4407043](https://doi.org/10.1090/proc/15131), [arXiv:2102.07025](https://arxiv.org/abs/2102.07025).
- [39] Jiří Lebl, Alan Noell, Sivaguru Ravisankar, *On CR singular CR images*, Internat. J. Math., **32** (2021), no. 13, 2150090 (26 pages), [MR 4361992](https://doi.org/10.1080/10737169.2021.1982012), [arXiv:2012.01820](https://arxiv.org/abs/2012.01820).
- [38] Bernhard Lamel, Jiří Lebl, *Segre nondegenerate totally real subvarieties*, Math. Z., **299** (2021), no. 1–2, 163–181, [MR 4311600](https://doi.org/10.1007/s00209-020-02598-8), [arXiv:2001.08598](https://arxiv.org/abs/2001.08598).
- [37] John P. D'Angelo, Dusty Grundmeier, Jiří Lebl, *Rational sphere maps, linear programming, and compressed sensing*, Complex Anal. Synerg., **6** (2020), no. 1, Paper No. 4, [MR 4062913](https://doi.org/10.1007/s40304-020-00291-3), [arXiv:1911.05559](https://arxiv.org/abs/1911.05559).

- [36] Jiří Lebl, Alan Noell, Sivaguru Ravisankar, *A CR singular analogue of Severi's theorem*, Math. Z., **299** (2021), no. 3–4, 1607–1629, [MR 4329261](#), [arXiv:1909.04752](#).
- [35] Anne-Katrin Gallagher, Jiří Lebl, Koushik Ramachandran, *The closed range property for the $\bar{\partial}$ -operator on planar domains*, J. Geom. Anal., **31** (2021), 1646–1670, [MR 4215271](#), [arXiv:1901.04390](#).
- [34] Jiří Lebl, Alan Noell, Sivaguru Ravisankar, *On the Levi-flat Plateau problem*, Complex Anal. Synerg., **6** (2020), no. 1, Paper No. 3, [MR 4052029](#), [arXiv:1809.01276](#).
- [33] Adam Coffman, Jiří Lebl, *Removing Isolated Zeroes by Homotopy*, Topol. Methods Nonlinear Anal., **54** (2019), no. 1, 275–296, [MR 4018281](#), [arXiv:1712.01787](#).
- [32] Anne-Katrin Gallagher, Jiří Lebl, Koushik Ramachandran, *Convexity of level lines of Martin functions and applications*, Anal. Math. Phys., **9** (2019), no. 1, 443–452, [MR 3933550](#), [arXiv:1710.00280](#).
- [31] Jiří Lebl, Alan Noell, Sivaguru Ravisankar, *On Lewy extension for smooth hypersurfaces in $\mathbb{C}^n \times \mathbb{R}$* , Trans. Amer. Math. Soc., **371** (2019), no. 9, 6581–6603, [MR 3937338](#), [arXiv:1704.08662](#).
- [30] Jiří Lebl, Asif Shakeel, Nolan Wallach, *Unentangled Measurements and Frame Functions*, J. Math. Phys., **59** (2018), no. 6, 062107, [MR 3816448](#), [arXiv:1701.06069](#).
- [29] Jiří Lebl, Alan Noell, Sivaguru Ravisankar, *Codimension two CR singular submanifolds and extensions of CR functions*, J. Geom. Anal., **27** (2017), no. 3, 2453–2471, [MR 3667437](#), [arXiv:1604.02073](#),
- [28] Jiří Lebl, Arturo Fernández Pérez, *Global and local aspects of Levi-flat hypersurfaces*. Publicações Matemáticas do IMPA. 30º Colóquio Brasileiro de Matemática. Instituto Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, 2015. ISBN: 978-85-244-0407-8. [MR 3242789](#),
- [27] Jiří Lebl, Alan Noell, Sivaguru Ravisankar, *Extension of CR functions from boundaries in $\mathbb{C}^n \times \mathbb{R}$* , Indiana Univ. Math. J., **66** (2017), no. 3, 901–925, [MR 3663330](#), [arXiv:1505.05255](#).
- [26] Jiří Lebl, Asif Shakeel, Nolan Wallach, *Local Distinguishability of Generic Unentangled Orthonormal Bases*, Phys. Rev. A. **93** (2016), no. 1, 012330, [arXiv:1502.06639](#).
- [25] Dusty Grundmeier and Jiří Lebl, *Initial monomial invariants of holomorphic maps*, Math. Z. **282** (2016), no. 1, 371–387, [MR 3448385](#), [arXiv:1502.03434](#).
- [24] Jiří Lebl, *An example of a compact non- \mathbf{C} -analytic real subvariety of \mathbf{R}^3* , [arXiv:1412.4838](#).
- [23] John P. D'Angelo and Jiří Lebl, *Homotopy equivalence for proper holomorphic mappings*, Adv. Math., **286** (2016), 160–180, [MR 3415683](#), [arXiv:1408.1104](#).
- [22] Jiří Lebl, *Singular Levi-flat hypersurfaces in complex projective space induced by curves in the Grassmannian*, Internat. J. Math., **26** (2015), no. 5, 1550036 (17 pages), [MR 3345513](#), [arXiv:1407.5913](#).
- [21] Xianghong Gong and Jiří Lebl, *Normal forms for CR singular codimension two Levi-flat submanifolds*, Pacific J. Math., **275** (2015), no. 1, 115–165. [MR 3336931](#), [arXiv:1403.0558](#).
- [20] Jiří Lebl, *Addendum to Uniqueness of certain polynomials constant on a line*, [arXiv:1302.1441](#).
- [19] Jennifer Halfpap and Jiří Lebl, *Signature pairs of positive polynomials*, Bull. Inst. Math. Acad. Sin. (N.S.), **8** (2013), no. 2, 169–192, [MR 3098535](#), [arXiv:1211.0997](#).
- [18] Jiří Lebl, André Minor, Ravi Shroff, Duong Son, and Yuan Zhang, *CR singular images of generic submanifolds under holomorphic maps*, Ark. Mat., **52** (2014), no. 2, 301–327, [MR 3255142](#), [arXiv:1205.5309](#).
- [17] Dusty Grundmeier, Jiří Lebl, and Liz Vivas, *Bounding the rank of Hermitian forms and rigidity for CR mappings of hyperquadrics*, Math. Ann., **358** (2014), no. 3–4, 1059–1089, [MR 3175150](#), [arXiv:1110.4082](#).
- [16] Jiří Lebl and Han Peters, *Polynomials constant on a hyperplane and CR maps of spheres*, Illinois J. Math., **56** (2012), no. 1, 155–175, [MR 3117023](#), [arXiv:1105.2343](#).
- [15] Jiří Lebl, *Singular set of a Levi-flat hypersurface is Levi-flat*, Math. Ann., **355** (2013), no. 3, 1177–1199, [MR 3020158](#), [arXiv:1012.5993](#).
- [14] Orest Bucicovschi and Jiří Lebl, *On the continuity and regularity of convex extensions*, J. Convex Anal., **20** (2013), no. 4, 1113–1126, [MR 3184299](#), [arXiv:1012.5796](#).
- [13] John P. D'Angelo and Jiří Lebl, *Pfister's theorem fails in the Hermitian case*, Proc. Amer. Math. Soc., **140** (2012), 1151–1157, [MR 2869101](#), [arXiv:1010.3215](#).
- [12] John P. D'Angelo and Jiří Lebl, *Hermitian symmetric polynomials and CR complexity*, J. Geom. Anal., **21** (2011), no. 3, 599–619, [MR 2810845](#), [arXiv:1003.0126](#).
- [11] Jiří Lebl and Han Peters, *Polynomials constant on a hyperplane and CR maps of hyperquadrics*, Mosc. Math. J., **11** (2011), no. 2, 287–317, [MR 2859238](#), [arXiv:0910.2673](#).
- [10] Jiří Lebl, *Normal forms, Hermitian operators, and CR maps of spheres and hyperquadrics*, Michigan Math. J., **60** (2011), no. 3, 603–628, [MR 2861091](#), [arXiv:0906.0325](#).

- [9] Jiří Lebl, *Pullback of varieties by finite maps*, preprint [arXiv:0812.2498](https://arxiv.org/abs/0812.2498).
- [8] Jiří Lebl and Daniel Lichtblau, *Uniqueness of certain polynomials constant on a line*, *Linear Algebra Appl.*, **433** (2010), no. 4, 824–837, [MR 2654111](https://doi.org/10.1016/j.laa.2010.05.028), [arXiv:0808.0284](https://arxiv.org/abs/0808.0284).
- [7] Jiří Lebl, *Algebraic Levi-flat hypervarieties in complex projective space*, *J. Geom. Anal.*, **22** (2012), no. 2, 410–432, [MR 2891732](https://doi.org/10.1007/s12220-011-9173-3), [arXiv:0805.1763](https://arxiv.org/abs/0805.1763).
- [6] John P. D’Angelo and Jiří Lebl, *On the complexity of proper holomorphic mappings between balls*, *Complex Var. Elliptic Equ.*, **54** (2009), nos. 3–4, 187–204, [MR 2513534](https://doi.org/10.1080/00137380903251353), [arXiv:0802.1739](https://arxiv.org/abs/0802.1739).
- [5] Jiří Lebl, *Levi-flat hypersurfaces with real analytic boundary*, *Trans. Amer. Math. Soc.*, **362** (2010), no. 12, 6367–6380, [MR 2678978](https://doi.org/10.1090/S0002-9947-2010-0507103-1), [arXiv:0710.3801](https://arxiv.org/abs/0710.3801).
- [4] John P. D’Angelo and Jiří Lebl, *Complexity results for CR mappings between spheres*, *Internat. J. Math.*, **20** (2009), no. 2, 149–166, [MR 2493357](https://doi.org/10.1080/10737160903251357), [arXiv:0708.3232](https://arxiv.org/abs/0708.3232).
- [3] Jiří Lebl, *Extension of Levi-flat hypersurfaces past CR boundaries*, *Indiana Univ. Math. J.*, **57** (2008), no. 2, 699–716, [MR 2414332](https://doi.org/10.1080/00207179.2008.2414332), [arXiv:math.CV/0612071](https://arxiv.org/abs/math.CV/0612071).
- [2] John P. D’Angelo, Jiří Lebl, and Han Peters, *Degree Estimates for Polynomials Constant on a Hyperplane*, *Michigan Math. J.*, **55** (2007), no. 3, 693–713, [MR 2372622](https://doi.org/10.1080/00255718.2007.11954622), [arXiv:math.CV/0609713](https://arxiv.org/abs/math.CV/0609713).
- [1] Jiří Lebl, *Nowhere minimal CR submanifolds and Levi-flat hypersurfaces*, *J. Geom. Anal.*, **17** (2007), no. 2, 321–341, [MR 2320166](https://doi.org/10.1007/s12220-006-0614-1), [arXiv:math.CV/0606141](https://arxiv.org/abs/math.CV/0606141).

Textbooks:

- *Notes on Diffy Qs: Differential Equations for Engineers*, 466 pages. Introductory differential equations textbook. ISBN: 978-1706230236. Available for download at <https://www.jirka.org/diffyqs/>.
- *Basic Analysis I: Introduction to Real Analysis, Volume I*, 312 pages. Introductory real analysis textbook. ISBN: 979-8851944635. Available for download at <https://www.jirka.org/ra/>.
- *Basic Analysis II: Introduction to Real Analysis, Volume II*, 217 pages. Additional topics in undergraduate analysis. ISBN: 979-8851945977. Available for download at <https://www.jirka.org/ra/>.
- *Guide to Cultivating Complex Analysis: Working the Complex Field*, 304 pages. First course in graduate complex analysis in one variable. ISBN: 979-8-6850-5792-1. Available for download at <https://www.jirka.org/ca/>.
- *Tasty Bits of Several Complex Variables*, 248 pages. Introductory course in several complex variables for beginning graduate students. ISBN: 979-886690668. Available for download at <https://www.jirka.org/scv/>.
- *Hermitian Forms Meet Several Complex Variables: Minicourse on CR Geometry Using Hermitian Forms*, 62 pages. Notes for a half-semester graduate mini-course on Hermitian forms and CR geometry given at UIUC in Spring 2010. Available for download at <https://www.jirka.org/scv-mini/>.

The two undergraduate books above have been or are being currently used in hundreds of university classes. Apart from my own usage at UIUC, UCSD, UW–Madison, and OSU, they have been used at Dartmouth College, University of California at Berkeley, University of Tennessee, University of Pittsburgh, Iowa State University, University of British Columbia, University of California at Irvine, Texas A&M, University of Hawaii, and many others.

The real analysis book was chosen as the standard book for the class at Iowa State University, University of Pittsburgh, University of Wisconsin–Green Bay, and St. John’s University of Tanzania. The differential equations book was chosen as the standard book at University of California at Irvine, Santa Barbara City College, Frederick Community College, Southern California Institute of Technology, and de-facto standard book at the University of British Columbia. Both books are approved textbooks in the American Institute of Mathematics Open Textbook Initiative.

The graduate several complex variables textbook has been used as a textbook for a topics course at several universities.

Book Chapters:

- “Ordinary Differential Equations” in *Computational Toxicology*, Ed. Brad Reisfeld, Arthur Mayeno, volume 2, Series: Methods in Molecular Biology, Humana Press, 2012.
- “Appendix E: Balls and Springs” in *Beginning GTK+/GNOME Programming* by Peter Wright, Wrox Press, 2000.

Research Interests:

My primary interests lie in *complex analysis* in general and CR geometry in particular. My research in CR geometry also led me to study problems in real and complex algebraic geometry, discrete geometry, combinatorics, number theory, and experimental mathematics using computers. My research philosophy is not simply to solve problems within the confines of a particular area, but to look for connections and applications to other areas of mathematics and even other disciplines.

My work on CR geometry includes two particular problems: proper holomorphic mappings between balls and hyperquadrics and the singularity structure of a singular Levi-flat hypersurfaces. See my research statement for further information.

Favorite AMS MSC numbers: 32 (several complex variables), 14 (algebraic geometry), 30 (one complex variable).

Conference Presentations:

- *Proper maps of ball complements & differences and rational sphere maps*, 2nd International Joint Meeting AMS/UMI, July 23–26, 2024, Università degli Studi di Palermo, Italy.
- *Singular Levi-flat hypersurfaces*, 8 lecture minicourse given at TIFR CAM CR Geometry 2024, June 24 – July 5, 2024, TIFR CAM, Bangalore, India.
- *Tasty Bits of Several Complex Variables*, Part of the S-Matrix Marathon workshop at the Institute of Advanced Study, Princeton, NJ, March 2024. Lectures 1 and 3 (Sean Curry did lectures 2 and 4).
- *Normal forms for proper maps of balls and associated groups*, Joint Mathematical Meetings, AMS special session, January 2024, San Francisco, CA.
- *Singular Levi-flat hypersurfaces*, Minicourse in SCV India Online Seminars series, August 2023, Online.
- *Cartan uniqueness theorem on nonopen sets*, Joint Mathematical Meetings, AMS special session, April 2022, Online.
- *Segre-Degenerate Points Form a Semianalytic Set*, Pre-Conference Symposium — 36th Annual Ramanujan Mathematical Society Conference (RMS 2021), August 2021, Online.
- *Segre-Degenerate Points Form a Semianalytic Set*, Virtual East-West Several Complex Variables seminar, March 2021, Online.
- *Removable CR Singularities*, AMS special session, October 2020, Fall Western Sectional Meeting, Online.
- *Extending CR functions from codimension 2 CR singular manifolds in any dimension*, AMS special session, September 2019, Madison, Wisconsin.
- *Severi's theorem for codimension 2 CR singular manifolds \mathbb{C}^3* , 10th Workshop on Geometric Analysis of PDE and Several Complex Variables, August 2019, Serra Negra, Brazil.
- *Averaging Functions over Segre Varieties*, AMS special session, March 2019, Honolulu, Hawaii.
- *Levi-flat Plateau problem*, Analysis and CR Geometry Workshop, December 2018, Erwin Schroedinger Institute, Vienna, Austria.
- *Levi-flat Plateau problem*, AMS special session, November 2018, Fayetteville, Arkansas.
- *Complex analysis with a real parameter and the Levi-flat Plateau problem*, Midwestern Workshop on Asymptotic Analysis, October 2018, Bloomington, Indiana.
- *On Lewy extension for smooth hypersurfaces in $\mathbb{C}^n \times \mathbb{R}$* , Complex Geometry and PDEs, May 2017, Beirut, Lebanon.
- *On Lewy extension for smooth hypersurfaces in $\mathbb{C}^n \times \mathbb{R}$* , AMS special session, April 2017, Pullman, WA.
- *Codimension two CR singular submanifolds and extensions of CR functions*, Midwest SCV, May 2016, Toledo, OH.
- *Extensions of CR functions in $\mathbb{C}^n \times \mathbb{R}$* , AMS special session, April 2016, Salt Lake City, UT.
- *Local and Global Aspects of Singular Levi-flat Hypersurfaces*, Advanced course at 30^o Colóquio Brasileiro de Matemática, 26–31 of July 2015, IMPA, Rio de Janeiro, Brazil.
- *Homotopy equivalence for proper holomorphic mappings*, AMS special session, March 2015, Mich. State Univ., MI.
- *Normal forms for CR singular codimension two Levi-flat submanifolds*, Workshop on Complex Analysis and Geometry in Wuhan University, May 2014, Wuhan, China.
- *Signature pairs of positive polynomials*, Joint Math. Meetings, AMS special session, Jan. 2013, San Diego, CA.
- *Bounding the rank of Hermitian forms and rigidity for CR mappings of hyperquadrics*, International Workshop on Several Complex Variables and Complex Geometry, July 2012, Taipei, Taiwan.
- *Polynomials constant on a hyperplane and CR maps of spheres*, RTG Workshop on Complex Analysis, October 2011, Ann Arbor, MI.
- *Poster Singular set of a Levi-flat hypersurface is Levi-flat*, VI Workshop on Geometric Analysis of PDE and Several Complex Variables, August 2011, Serra Negra, Brazil.
- *Hermitian forms and rational maps of hyperquadrics*, CIRM - CR-Geometry and PDE's - IV, June 2010, Levice Terme, Italy.
- *Polynomials constant on a hyperplane and CR maps of spheres*, AMS special session, March 2010, Lexington, KY.
- *Hermitian forms and rational maps of hyperquadrics*, RTG Workshop on Holomorphic Maps and Iterations, March 2010, Ann Arbor, MI.
- *Uniqueness of certain polynomials constant on a hyperplane*, Applications of Computer Algebra 2009, Montréal,

Canada.

- *Singular Levi-flat hypersurfaces in complex projective space*, Conference on Complex and CR Geometry, Partial Differential Equations and Invariant Theory in honor of Joseph J. Kohn, July 2008, Prague, Czech Rep.
- *Singular Levi-flat hypersurfaces in complex projective space*, CIRM - CR-Geometry and PDE's - III, June 2008, Levico Terme, Italy.
- *Levi-flat hypersurfaces with real analytic boundary*, Special session CMS meeting, December 2007, London, Canada.
- *Extensions of Levi-flat hypersurfaces past CR boundaries*, AMS special session, October 2007, Chicago, IL.
- *Singularities of Levi-Flat Hypersurfaces*, International Conference in PDE, Complex Analysis, and Differential Geometry, June 2006, Notre Dame, IN.

I gave seminar/colloquium talks at UCSD, UIUC, UW–Madison, OSU, SUNY–Stony Brook, Cal State San Marcos, City College of New York, University of Vienna, Georgia State University, Australian National University, University of Adelaide, San Diego State University, Western Illinois University, University of Hawaii, Rutgers University, University of Arkansas, University of Ljubljana, and Texas A&M University.

Editorial boards:

- Rocky Mountain Journal of Mathematics, 2020–present

Students:

PhD students:

- Alekzander Malcom, 2021. First (and current) position: Clinical Assistant Professor of Mathematics, in the Courant Institute, NYU.
- Achinta Nandi, 2024. First (and current) position: SEW Assistant Professor (postdoc) at UCSD.
- Abdullah Al Helal, expected 2026.

Masters students:

- Jianou Zhang, 2017.
- Trevor Fancher, 2020.

Postdoc mentoring:

- Sivaguru Ravisankar, OSU 2013–2016. Currently: Reader at TIFR CAM, Bangalore, India.
- Octavian Mitrea, OSU 2019–2021.
- Luka Mernik, OSU 2021–2024. Currently: Assistant Professor at Florida Polytechnic University.

Awards (other than grants):

- Appeared in *List of Teachers Ranked as Excellent by Their Students* for spring 2010 for UIUC Math 595.
- The Honor Society of Phi Kappa Phi, spring 2003.

Teaching Experience:

I wrote six textbooks for my classes, freely available online, and used at dozens of universities. See above.

Teaching experience (5000+ are graduate) — At OSU: calculus I/II/III (2144, 2153, 2163), differential equations (2233, 4263, 4233), vector calculus (4013), geometry (4403), introductory analysis (4143, 4153, 5043, 5053), complex variables (4283, 5283), several complex variables (6283), manifolds (5193), applied mathematics (5593), UW–Madison: analysis (521, 522, 621), PDE (322), discrete mathematics (240), and calculus (213, 222). UCSD: differential equations (20D), multivariable calculus (10C and 20C), integral calculus (20B), vector calculus (20E, 31CH), and real analysis (140A/B). UIUC: advanced calculus (380), finite mathematics (124), differential equations (286, 285), matrix analysis (225), real analysis (444), and CR geometry (595).

Programming/Computer Experience:

I have extensive programming experience, mostly in C and C++, but also in Tcl, Perl, Python, PHP, BASIC, Pascal, GEL, Lisp, Matlab/Octave, Maple, and others. I was a major contributor to the GNOME project for several years (<http://www.gnome.org>), and was employed as a programmer several times. I was a member of the GNOME steering committee and later a member of the GNOME Foundation board of directors. I published several programming tutorials in Linux and GNOME related publications, and gave several talks on GNOME, programming, and security at GNOME and Linux conferences. I am the author and maintainer of the free software mathematics package Genius (<https://www.jirka.org/genius.html>), which includes its own programming language, GEL. I have extensive knowledge of L^AT_EX, for example I wrote the thesis style for San Diego State University mathematics department.

I have used WeBWorK for several classes (I also maintain the OSU WeBWorK server), and I have authored many new problems, most of which have been contributed to the Open Problem Library.

Other Service:

I served on an NSF panel in 2022. I was on the organizing committee of *Conference on Complex Analysis and Geometry on the occasion of Sidney Webster's 70th birthday* March 27–29, 2015, University of Wisconsin-Madison. I helped organize *Southern California Analysis and PDE Conference (SCAPDE)* at UCSD on May 28–29, 2011. I co-organized (with John D'Angelo and Alex Tumanov) a special session at the AMS regional meeting at Urbana–Champaign on March 27–29 2009 titled *Holomorphic and CR Mappings*.

I refereed papers for Canadian Journal of Mathematics, Illinois Journal of Mathematics, Journal of Geometric Analysis, Proceedings of the London Mathematical Society, Journal of the London Mathematical Society, Journal of the Indian Mathematical Society, Mathematische Annalen, Mathematika, Pacific Journal of Mathematics, Proceedings of American Mathematical Society, Pure and Applied Mathematics Quarterly, Transactions of American Mathematical Society, and Trends in Math (Birkhäuser–Verlag), Advancase in Mathematics, Contemporary Mathematics, Journal of Mathematical Analysis and Applications, International Journal of Mathematics, Izvestiya RAN. Seriya Matematicheskaya, The American Mathematical Monthly. I submitted many reviews for AMS Mathematical Reviews and Zentralblatt MATH.

The six textbooks mentioned above are all freely available online and modification is explicitly allowed. The mathematics software package Genius is also freely available for download and modification. I contributed over 150 mathematics entries to the Planetmath and Wikipedia encyclopedias. I contributed over a hundred WeBWorK problems to the WeBWorK Open Problem Library.

Citizenship: *USA and Czech Republic.*

References:

Prof. Peter Ebenfelt, University of California, San Diego, pebenfel@ucsd.edu
Prof. John P. D'Angelo, University of Illinois at Urbana–Champaign, jpda@math.uiuc.edu
Prof. Dmitri Zaitsev, Trinity College Dublin, Ireland, zaitsev@maths.tcd.ie
Prof. Bernhard Lamel, University of Vienna, Austria, bernhard.lamel@univie.ac.at
Prof. Alan Noell, Oklahoma State University, alan.noell@okstate.edu
Dr. Anne-Katrin Gallagher, Gallagher Tool & Instrument, LLC, gallagherannek@gmail.com