Curriculum Vitae
Jeffrey Diller

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Education

9/88–8/93: University of Michigan, Ann Arbor.
Ph.D. in mathematics.
Thesis Advisor: David Barrett.
Thesis Title: Levi-Flat Surfaces with Circular Cross–Sections and
Bounded Analytic Functions.

8/84–5/88: University of Dayton.
B.S. in mathematics, minor in physics.

Positions held

5/10–present: Professor, University of Notre Dame.

7/15–7/19: Mathematics Department Chair, University of Notre Dame.

5/02–5/10: Associate Professor, University of Notre Dame.

1/02–4/02: Visiting scholar in math department at the University of Michigan, Ann Arbor.

10/02–11/02: Professor Invité. Université Paul Sabatier. Toulouse, France.

8/98–5/02: Assistant Professor, University of Notre Dame.

8/95–6/98: H.C. Wang Assistant Professor/NSF Postdoctoral Fellow,
Cornell University.

9/93–7/95: Visiting Assistant Professor, Indiana University.

9/89–12/92: Instructor, University of Michigan.

Grants

9/20-8/22: National Science Foundation conference grant: # DMS 2034566 (total funding: $38,000).

5/20-4/23: National Science Foundation grant # DMS-1954335 (total funding: $286,480).

9/11-8/15: National Science Foundation grant #DMS10-66798 (total funding: $185,179).

6/07–5/11: National Science Foundation grant #DMS06-53678.

5/02–5/05: National Science Foundation grant #DMS01-40408.

8/98–5/02: National Science Foundation grant #DMS98-96370.

8/95–5/98: National Science Foundation Postdoctoral Fellowship.

Graduate Thesis Students

8/18–present: Richard Birkett.

5/09–12/15: Douglas Smith.

5/09–5/14: Han Liu.

8/01–7/05: Daniel Jackson.

Postdoctoral Advisee

8/10–5/12: Jan-Li Lin.

Undergraduate Thesis Students

5/21–present: Campbell Goff.

5/18–5/19: Nick Lohr.

5/16–5/17: Jeff Marino.

1/08-5/09: Andrew Manion.

1/07–5/08: Steven Matthis.

8/03–4/05: Mike Jenista.

Other Awards

2015 Joyce award for excellence in undergraduate teaching.

2012 Shilts-Leonard teaching award.

2008 Joyce award for excellence in undergraduate teaching.

2003 Kaneb teaching award winner.

1992–93 Outstanding Teaching Assistant Award, University of Michigan Mathematics Department.

Other notable experience and activities

11/21 - present: Chair, Postdoctoral Search Committee

1/21 - present, 1/20-5/12, 1/12-5/12: Granduate Admissions Committee.

10-11/21: coauthor of successful Center for Mathematics, Moment to See Courage to Act proposal.

5/20-present, 5/13-5/16, 5/7-5/10: Undergraduate Committee.

9/10–present: Board member, Riverbend Community Math center.

10/20-5/20, 5/06-5/07: Hiring Committee.

7/16–6/19: Math Department Chair.

11/17–8/21 Elected Chair of Quantitative Reasoning Core Curriculum Subcommittee.

7/16–6/19: Chair of University Math Core Curriculum subcommittee.

10/17–6/19: College Chair, Science Advisory Committee on Undergraduate Experience.

2/17–delivered invite Scientia Talk about undergraduate research in math.

7/11–7/16: helped Riverbend Community Math Center organize it's annual math circle workshop
at Notre Dame.

5/15–5/16, 5/11-5/12, 5/04-5/06: math department CAP.

5/13–5/16: implemented a major revision of Honors Calculus 3 and 4 partly in order
to allow incoming freshman to take this sequence.

5/13–5/16: Director of Math Department Honors Program.

10/12: organized (with Francois Ledrappier) Midwest Dynamical Systems meeting held at Notre Dame.

5/10-5/12: math club advisor.

5/10-5/12: Faculty senate department representative.

1/09-present: Associate editor for the Journal of Geometric Analysis.

5/10-5/11: organized 'Math for Everyone' undergraduate math series: three panel discussions and
eight lectures (7 by external speakers).

10/10-5/11: geometry position search committee.

11/10: organized (with Laura Demarco) special session 'Complex analysis and dynamical systems' for AMS sectional meeting at Notre Dame.

3/09: organized conference on multi-variable complex dynamics held at Banff International Research Station.

11/08: organized introductory workshop in complex dynamics held at Fields Institute in Toronto.

5/08-12/08: departmental strategic plan committee.

8/06–5/07: revised honors linear algebra course to include larger ordinary differential equations component.

8/06–5/07: reading group in Fourier Analysis for sophomore honors majors.

4/06: organized (with Nancy Stanton) special session on several complex variables for the AMS meeting at Notre Dame.

8/05–1/11: University mathematics core curriculum subcommittee.

5/05–5/09: co-organized (with Alex Hahn) summer RET program for math teachers at Notre Dame.

1/03–12/05: taught and developed new course (math 223) for math majors. at Notre Dame.

1/03–5/03 and 8/99–5/00: faculty meeting secretary

3/03: co-organizer for midwest several complex variables meeting at Notre Dame.

1/03–5/06: undergraduate advisor.

1/03: proposed a major revision to the curriculum for math majors at Notre Dame. This was adopted in the '03-'04 academic year.

4/00: organized (with Nancy Stanton) special session on several complex variables for the AMS meeting at Notre Dame.

1/99–5/01: developed an ODE course for sophomore math majors at Notre Dame

5/97–5/98: organized complex dynamics seminar at Cornell University.

1/95–5/16, 6/19–present: reviewer for Math Reviews.

Refereed Publications

With David Barrett: "Poincaré series and holomorphic averaging." Inventiones Mathematicae, vol. 110, pp 23–28 (1992)

"The failure of weak holomorphic averaging on multiply connected domains." Mathematische Zeitschrift, vol 217, pp 167–178 (1994).

"A canonical $\overline{\partial}$ problem for Riemann surfaces." Indiana University Mathematics Journal, vol 44, pp 747–763 (1995).

"Limits on an extension of Carleson's $\overline{\partial}$ theorem." Journal of Geometric Analysis, vol 6, pp 1–17 (1996).

With David Barrett: "Contraction properties of the Poincaré series operator." Michigan Mathematics Journal, vol 43, pp 519–538 (1996).

"Dynamics of birational maps of $\mathbb{P}^2$." Indiana University Mathematics Journal, vol. 45, pp 721–772 (1996).

With David Barrett: "A new construction of Riemann surfaces with corona." Journal of Geometric Analysis, vol 8 pp 341–347 (1998).

"Birational maps, positive closed currents, and dynamics." Michigan Journal of Mathematics, vol 46, pp 361–375 (1999).

With Mattias Jonsson: "Topological entropy on saddle sets in $\mathbb{P}^2$." Duke Mathematical Journal, vol 103, pp 261–278 (2000).

"Green's functions, electric networks, and geometry of hyperbolic Riemann surfaces." Illinois Journal of Mathematics, vol 35, pp 453–485 (2001).

"Invariant measure, and Lyapunov exponents for separating birational maps of $\mathbb{P}^2$." Commentarii Mathematici Helvetici, vol 76, pp 754–780 (2001).

With Charles Favre: "Dynamics of bimeromorphic maps of surfaces." American Journal of Mathematics, vol 123, pp 1135–1169 (2001).

With Eric Bedford: "A family of plane birational maps with real dynamics conjugate to the Fibonacci subshift." American Journal of Mathematics, vol 127, pp 595–646 (2005).

With Eric Bedford: "Energy and invariant measure for birational surface maps." Duke Mathematical Journal, vol 128, pp 331–368 (2005).

With Eric Bedford: "A two parameter family of real birational maps with maximal entropy." Journal of Geometric Analysis, vol 16, pp 409–430 (2006).

With Daniel Jackson and Andrew Sommese: "Invariant curves for birational surface maps." Transactions of the AMS, vol 359, pp 2973–2991 (2007).

With Eric Bedford: "Real dynamics of a family of plane birational maps: trapping regions and entropy zero." in volume *Complex Dynamics: Families and Friends.* Published by AK Peters (2009).

With Vincent Guedj: "Regularity of dynamical Green's functions." Transactions of the AMS, vol 9, pp 4783–4805 (2009).

With Ashraf Al-Khateeb, Joseph Powers, Samuel Paolucci, Andrew Sommese Jonathan Hauenstein, Joshua Mengers: "One dimensional slow invariant manifolds for spatially homogeneous reactive systems." Journal of Chemical Physics, vol 131 (2009).

With Romain Dujardin and Vincent Guedj: "Dynamics of meromorphic maps with small topological degree I: from currents to cohomology. Indiana University Math Journal, vol 59, pp 521-561 (2010).

With Romain Dujardin and Vincent Guedj: "Dynamics of meromorphic maps
with small topological degree II: energy and invariant measure. Comentarii
in Mathematici Helvetici, 86 (2011), no. 2, 277316.

With Romain Dujardin and Vincent Guedj: "Dynamics of meromorphic maps
with small topological degree III: geometric currents and ergodic theory."
Annales Scientifiques de l'Ecole Normale Superiuere, vol 43, pp 235-278 (2010).

"Cremona transformations, surface automorphisms and the group law on a cubic."
(with an appendix by Igor Dolgachev) Michigan Math Journal, vol 60,
pp 409-440 (2011).

With Eric Bedford and Kyounghee Kim. "Pseudoautomorphisms with invariant elliptic curves".
Proceedings of the Abel Symposium volume *Complex Geometry and Dynamics*
published by Springer, 1-27 (2015).

With Jan-Li Lin. "Rational surface maps with invariant two forms".
Math Annalen, vol 364, pp 313-352 (2016).

With Han Liu and Roland Roeder. "Typical dynamics of plan rational maps with equal degrees".
Journal of Modern Dynamical Systems, vol 10 pp 353-377 (2016)

With Jan-Li Lin. "Rotation numbers of elements in Thompson's group $\mathbf{T}$".
Topology Proceedings, vol 50, pp 203-212 (2017).

With Kyounghee Kim. "Real and complex dynamics of rational surface automorphisms".
Experimental Math, vol 30, pp 172-190 (2021).

With Jason Bell and Mattias Jonsson. "A Transcendental Dynamical Degree".
Acta Mathematica, vol 125, pp 193-225 (2020).

Unrefereed publication

"Birational maps with sparse postcritical sets." Complex Dynamics, Proceedings
of RIMS at Kyoto University from April 2003-March 2004 (2005).

With Jason Bell, Mattias Jonsson and Holly Krieger. "Birational maps with transcendental
dynamical degree". Submitted.

Publications by Graduate Students

Richard Birkett. "Algebraic stability for birational surface maps: two approaches."
Submitted.

Invited Lectures

03/1993: Midwest Several Complex Variables Meeting. Ann Arbor, Michigan.

07/1994: Conference on Complex Dynamics in Highe Dimension. Göttingen, Germany.

01/1996: Winter meeting of the AMS, special session on Multi-Variable Complex Dynamics. Orlando, Florida.

03/1996: Workshop on Multi-variable Complex Dynamics. Ann Arbor, Michigan.

09/1996: Ontario Analytic Geometry Seminar. Waterloo, Ontario.

09/1997 Ontario Analytic Geometry Seminar. Waterloo, Ontario.

01/1998: Winter meeting of the AMS, special session on Smooth Ergodic Theory. Baltimore.

01/1999: Winter meeting of the AMS, special session on Several Complex Variables. San Antonio (January 1999).

03/1999: Scuola Normale Superiore special year in complex dynamics. Pisa, Italy.

04/1999 Conference on Complex Dynamics. Fayetteville, Arkansas.

01/2000: Winter meeting of the AMS, special session on Holomorphic Dynamics. Washington, DC.

06/2000: PhD Euroconference on Complex Analysis. Platja d'Aro, Spain.

08/2000: AIM conference on biholomorphic mappings. Palo Alto.

12/2000: Hayama symposium on several complex variables. Tokyo.

03/2001: Several complex variables seminar. Ann Arbor, Michigan.

03/2002: Midwest several complex variables meeting. Ann Arbor, Michigan.

10/2002: Complex analysis seminar. Université Paul Sabatier. Toulouse, France

10/2002: Complex geometry seminar. Université de Provence. Marseille, France.

11/2002: Complex analysis seminar. Université de Paris VI. Orsay, France.

11/2002: Seminar Yoccoz-Eliasson. Université de Paris VII. Paris, France.

04/2003: AMS special session on Holomorphic Dynamics. Bloomington, Indiana.

10/2003: Midwest Several complex variables meeting. Syracuse, New York.

12/2003: Conference on Complex Dynamics in Higher Dimensions. RIMS. Kyoto.

04/2004: Dynamics seminar. SUNY Stonybrook, NY.

09/2004: BIRS meeting on pluripotential theory and its applications. Banff, Alberta.

03/2005: Public lecture delivered at Jefferson Community College. Louisville, KY.

10/2005: Undergraduate math seminar at Kalamazoo College. Kalamazoo, MI.

12/2005: Complex analysis seminar. Indiana University, Bloomington.

01/2006: Geometric analysis seminar. Purdue University.

04/2006: Global analysis seminar. University of Chicago.

6/2006: Complex function theory and geometry conference. Warsaw, Poland.

03/2007: Midwest several complex variables meeting. University of Michigan.

07/2007: Wabash College REU seminar. Crawfordsville, IN.

10/2007: University of Michigan several complex variables seminar. Ann Arbor, MI.

07/2008: Wabash College REU seminar. Crawfordsville, IN.

10/2008: Midwest Dynamical Systems Conference. Indiana University. Bloomington.

11/2008: three lectures delivered at the Workshop on Complex Dynamics, Fields Institute, Toronto.

12/2009: Complex analysis seminar, Indiana University, Bloomington.

02/2009: Dynamical systems seminar, SUNY Stonybrook.

06/2009: Dynamique Géométrie Complexe conference at CIRM in Luminy, France.

07/2009: Wabash College REU seminar. Crawfordsville, IN.

10/2009 Midwest Several Complex Variables meeting, Purdue University.

12/2009: two talks delivered at the RTG workshop complex dynamics, University of Michigan.

10/2010: Science Saturday lecture to general audience. Notre Dame.

08/2011: Special session on complex dynamics. Mathfest. Lexington, KY.

11/2011: Undergraduate Mathematics Day. University of Dayton.

02/2013: KAWA 3 Workshop. Barcelona.

06/2013: Complex Dynamics (and related ares). Conference at the University of Illinois at Chicago.

09/2013: Math department colloquium. IUPUI.

09/2013: Geometry and Dynamical Systems Seminar. University of Michigan.

12/2013: Dynamical Systems Seminar. Stonybrook University.

03/2014: Self-Maps and Moduli Spaces. Conference at RIMS, Kyoto University.

04/2014: Dynamical Systems Seminar. Northwestern University.

01/2015: Complex Analysis and Dynamical Systems Seminar. University of Michigan.

03/2015: Dynamical Systems Seminar. IUPUI.

06/2015: SwissMAP meeting. Four lectures on dynamics of birational maps. Les Diablerets, Switzerland.

03/2016: Plenary Lecture. Spring Topology and Dynamical Systems Meeting. Baylor University.

04/2016: Bloomington Geometry Conference. Indiana University, Bloomington.

08/2016: Connections Between Complex Dynamics, Statistical Physics, and Limiting Spectra of Self-similar Group Actions. Workshop at IUPUI.

09/2016: Cremona Conference. Basel, Switzerland.

03/2017: University of Michigan Complex Analysis and Dynamics Seminar. Ann Arbor, MI.

03/2017: AMS Special Section Session on Randomness in Complex Analysis. Indiana University, Bloomington.

07/2017: Complex Dynamics: iterations, foliations and evolutions conference. Conference at the Center for Advanced Study. Oslo, Norway.

09/2017: IUPUI Dynamical Systems Seminar. Indianapolis, IN.

03/2018: University of Michigan Math Colloquium. Ann Arbor, MI.

05/2018: Workshop on Complex and Arithmetic Dyanmics. Northwestern University.

10/2019: Dynamical Systems Seminar. Stonybrook University.

10/2019: Colloquium. University of Waterloo.

10/2019: Complex Analysis and Dynamics Seminar. University of Michigan, Ann Arbor.

01/2020: AMS Special Session on Arithmetic Dynamics. American Math Society Winter Meeting. Denver, Colorado.

04/2021: ADIOS seminar. Online, international.

11/2021: Midwest Dynamical Systems, 50th Anniversary Meeting. Northwestern University.

11/2021: BIRS workshop, Algebraic Dynamics and its Connections to Difference and Differential Equations. Banff, Alberta.