

# Curriculum Vitae of Adrian Vasiu, April 21, 2023

## Residency

- U.S.A. Citizen
- Romanian and European Citizen

## Chronology of education

- 9/88–7/91 B.A., Mathematics, Babeş-Bolyai University, Cluj–Napoca, Romania
- 9/91–6/94 Ph.D., Mathematics, Princeton University, Princeton, U.S.A.  
Date awarded: Nov. 5, 1994.  
Thesis title: “Integral canonical models for Shimura varieties of Hodge type”.
- Advisor: Prof. Gerd Faltings  
Major field: Arithmetic Algebraic Geometry

## Chronology of employment

- 9/91–8/92 Fellowship for graduate studies, Princeton University, Princeton, U.S.A.
- 9/92–6/94 Teaching Assistant, Princeton University, Princeton, U.S.A.
- 9/94–8/95 Visiting Research Position at Max–Planck Institute for Mathematics, Bonn, Germany (scientific supervisor: Prof. G. Faltings)
- 9/95–9/96 Visiting Research Position at the Institute for Mathematics, ETH–Zürich, Switzerland (scientific supervisor: Prof. G. Wüstholtz)
- 7/96–6/99 Morrey Assistant Professor of Mathematics, University of California, Berkeley, U.S.A.
- 7/99–6/00 Visiting Assistant Professor of Mathematics, University of Utah, Salt Lake City, U.S.A.
- 7/00–6/07 Tenure-Track, Assistant Professor of Mathematics, University of Arizona, Tucson, U.S.A.
- 7/07– 8/08 Visiting Assistant Professor of Mathematics, Binghamton University, SUNY, Binghamton, U.S.A.
- 9/08–8/11 Tenure, Associate Professor of Mathematics, Binghamton University, SUNY, Binghamton, U.S.A.
- 9/11–present Tenure, (Full) Professor of Mathematics, Binghamton University, SUNY, Binghamton, U.S.A.

## Honors and awards

1. May 1987 First prize medalist, special prize for the generalization of a problem, and winner of the 5<sup>th</sup> Balcanic Olympiad in Mathematics, Athens, Greece
2. July 1987 Gold medalist and winner of the 28<sup>th</sup> International Olympiad in Mathematics, Havana, Cuba
3. May 1988 First prize medalist and winner of the 6<sup>th</sup> Balcanic Olympiad in Mathematics, Nicosia, Cyprus
4. July 1988 Gold medalist and winner of the 29<sup>th</sup> International Olympiad in Mathematics, Canberra, Australia
5. October 2015 SUNY Chancellor’s Award for Excellence in Scholarship and Creative Activities for the academic year 2014-2015

## Fellowships, Scholarships Awards, and Visits

1. Aug–Sep 1990 Fellowship from Matsumae International Foundation and Tokai University, Tokyo, Japan (to visit the ICM 90 in Kyoto)
2. 13 June– 19 June 2001 Scholarship from Max–Planck Institute for Mathematics, Bonn, Germany (invitation to attend 2001 Arbeitsagung)
3. 10 June– 17 June 2005 Scholarship from Max–Planck Institute for Mathematics, Bonn, Germany (invitation to attend 2005 Arbeitsagung)
4. 4 April– 4 May 2007 Invitation from Bielefeld University, Germany to spend one month and to give a series of lectures (host Prof. Thomas Zink)
5. 11 May– 11 Aug 2007 Scholarship from Max–Planck Inst. for Mathematics, Bonn, Germany
6. 12 Dec– 19 Dec 2007 Invitation from Indiana University to spend one week (host Prof. Michael Larsen)
7. 6 May– 5 June 2008 Invitation from Northwestern University to spend one month (host Prof. Kari Vilonen)
8. 11 June– 16 July 2008 Invitation from Bielefeld University, Germany to spend five weeks (host Prof. Thomas Zink)
9. 3 Aug– 9 Aug 2008 Invitation to attend the workshop on “Arithmetic Algebraic Geometry”, Math. Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany
10. 25 Nov– 11 Dec 2008 Invitation to give lectures during the Special p-adic Semester, Tata Institute of Fundamental Research (TIFR), Mumbai, India
11. 1 June– 2 July 2009 Invitation from Bielefeld University, Germany to spend one month (host Prof. Thomas Zink)
12. 9 Aug– 13 Aug 2009 Invitation from IHES, Bures-sur-Yvette, France (host Prof. Ofer Gabber)
13. 18 Sep– 12 Dec 2011 Fellowship from IAS, Princeton, NJ, USA
14. 14 Dec– 31 Dec 2011 Invitation to visit Tata Institute of Fundamental Research (TIFR), Mumbai, India
15. 3 June to 8 June 2012 Invitation to attend the workshop on “Arithmetic geometry of orthogonal and unitary Shimura varieties”, Banff International Research Station for Mathematical Innovation and Discovery (BIRS), Banff, Alberta, Canada
16. 5 Aug– 11 Aug 2012 Invitation to attend the workshop on “Arithmetic Algebraic Geometry”, Math. Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany
17. 28 June– 31 July 2013 Invitation from Bielefeld University, Germany to spend five weeks (host Prof. Thomas Zink)
18. 9 June to 13 June 2014 Invitation to attend and give a plenary talk with the occasion of the 60th Anniversary of Gerd Faltings, MPI, Bonn, Germany
19. 15 June to 30 June 2014 Invitation to visit IHES, Bures-sur-Yvette, France
20. 17 Jan to Feb 20 2015 Invitation to visit and give a course at Indian Institute of Science, Education and Research (IISER), Thiruvananthapuram, India (host Assistant Prof. Viji Thomas)
21. 19 June to 19 July 2015 Invitation to visit IHES, Bures-sur-Yvette, France (host Prof. Ofer Gabber)
22. Dec 11 2016 to January 10 2017 Invitation to visit and give a Class Field Theory course at Indian Institute of Science, Education and Research (IISER), Thiruvananthapuram, India (host Assistant Prof. Viji Thomas)
23. 10 June to 19 July 2018 Invitation to visit IHES, Bures-sur-Yvette, France (host Prof. Ofer Gabber)
24. June 30 to July 15 2022 Invitation from IHES, Bures-sur-Yvette, France (host Prof. Ofer Gabber) (not attended due to unexpected reasons)
25. June 3 to June 18 2024 Invitation from IHES, Bures-sur-Yvette, France (host Prof. Ofer Gabber)

## Publications

1. *An approach of the convex spaces by categorical methods*, 8–16, The Itinerant Sem. on Functional Equations, Approximation and Convexity, Babeş-Bolyai Univ., 1990
2. *On the category of  $S$ -groups*, Seminar on Geometry, 97–104, Preprint, **91-2**, Babeş-Bolyai Univ., Cluj-Napoca, 1991
3. *Some anchors of a pappusian projective plane* (joint work with Angela Vasiu), Sc. Univ. Tokyo Journal Math. **29** (1993), no. 2, 193–196
4. *Bolyai invites us to more wisdom, to our awakening* (joint work with Angela Vasiu), Proceedings of Symposium in Geometry (Cluj-Napoca and Tirgu Mureş, 1992), 209–216, Preprint, **93-2**, Babeş-Bolyai Univ., Cluj-Napoca, 1993
5. *Integral canonical models of Shimura varieties of preabelian type*, Asian J. Math. **3** (1999), no. 2, 401–518
6. *Surjectivity criteria for  $p$ -adic representations, Part I*, Manuscripta Math. **112** (2003), no. 3, 325–355
7. *A purity theorem for abelian schemes*, Michigan Math. J. **52** (2004), no. 1, 71–82
8. *Surjectivity Criteria for  $p$ -adic Representations, Part II*, Manuscripta Math. **114** (2004), no. 4, 399–422
9. *On two theorems for flat, affine groups schemes over a discrete valuation ring*, Centr. Eur. J. Math. **3** (2005), no. 1, 14–25
10. *Unipotent, normal subgroup schemes of reductive groups*, C. R. Acad. Sci. Paris, Ser. I **341** (2005), no. 2, 79–84
11. *Crystalline Boundedness Principle*, Ann. Sci. l'École Norm. Sup. **39** (2006), no. 2, 245–300
12. *Traverso's isogeny conjecture for  $p$ -divisible groups* (joint work with Marc-Hubert Nicole), Rend. Semin. Mat. J. Univ. Padova **118** (2007), pp. 73–83
13. *Projective integral models of Shimura varieties of Hodge type with compact factors*, J. Reine Angew. Math. **618** (2008), 51–75
14. *Minimal truncations of supersingular  $p$ -divisible groups* (joint work with Marc-Hubert Nicole), Indiana Univ. Math. J. **56** (2007), no. 6, 2887–2897
15. *Level  $m$  stratifications of versal deformations of  $p$ -divisible groups*, J. Alg. Geom. **17** (2008), no. 4, 599–641
16. *Integral canonical models of unitary Shimura varieties*, Asian J. Math. **12** (2008), no. 2, 151–176
17. *Some cases of the Mumford–Tate Conjecture and Shimura Varieties*, Indiana Univ. Math. J. **57** (2008), no. 1, 1–75
18. *Geometry of Shimura varieties of Hodge type over finite fields*, Proceedings of the NATO Advanced Study Institute on *Higher dimensional geometry over finite fields*, Göttingen, Germany, June 25 - July 06 2007, 197–243, IOS Press, 2008
19. *On the Tate and Langlands–Rapoport conjectures for Shimura varieties*, Oberwolfach Reports **5** (2008), no. 3, 2015–2018, Report No. 35/2008, Arithmetic Algebraic Geometry Workshop (organized by G. Faltings, J. de Jong, R. Pink), Mathematisches Forschungsinstitut Oberwolfach, Germany, August 3–8, 2008
20. *Reconstructing  $p$ -divisible groups from their truncations of small level*, Comment. Math. Helv. **85** (2010), no. 1, 165–202
21. *Breuil's classification of  $p$ -divisible groups over regular local rings of arbitrary dimension* (joint work with Thomas Zink), Advanced Studies in Pure Mathematics **58** (2010), 461–479, Proceeding of Algebraic and Arithmetic Structures of Moduli Spaces, Hokkaido University, Sapporo, Japan, 2007
22. *Mod  $p$  classification of Shimura  $F$ -crystals*, Math. Nachr. **283** (2010), no. 8, 1–46

23. *Purity of level  $m$  stratifications* (joint work with Marc-Hubert Nicole and Torsten Wedhorn), *Ann. Sci. Éc. Norm. Sup.* 43 (2010), no. 6, 925–955
24. *Purity results for  $p$ -divisible groups and abelian schemes over regular bases of mixed characteristic* (joint work with Thomas Zink), *Doc. Math.* 15 (2010), pp. 571–599
25. *Deformation subspaces of  $p$ -divisible groups as formal Lie group structures associated to  $p$ -divisible groups*, *J. Alg. Geom.* 20 (2011), no. 1, pp. 1–45
26. *Manin problems for Shimura varieties of Hodge type*, *J. Ramanujan Math. Soc.* 26 (2011), no. 1, 31–84
27. *A motivic conjecture of Milne*, *J. Reine Angew. Math. (Crelle)* 685 (2013), 181–247
28. *Integral models in mixed characteristic  $(0,2)$  of hermitian orthogonal Shimura varieties of PEL type, Part I*, *J. Ramanujan Math. Soc.* 27 (2012), no. 4, 425–477
29. *Boundedness results for finite flat group schemes over discrete valuation rings of mixed characteristic* (joint work with Thomas Zink), *J. Number Theory* 132 (2012), 2003–2019
30. *Generalized Serre–Tate Ordinary Theory*, monograph 243 pages, Intl. Press of Boston, Inc., ISBN: 978-1-57146-277-0, available at <http://intlpress.com/site/pub/pages/books/items/00000410/>
31. *Dimensions of group schemes of automorphisms of truncated Barsotti–Tate groups* (joint work with Ofer Gabber), *Int. Math. Res. Not. IMRN* 2013, no. 18, 4285–4333
32. *Subtle invariants for  $p$ -divisible groups and Traverso’s conjectures* Oberwolfach Reports 9 (2012), no. 3, 2363–2366, Arithmetic Algebraic Geometry Workshop (organized by G. Faltings and J. de Jong), Mathematisches Forschungsinstitut Oberwolfach, Germany, August 5–11, 2012
33. *Stratifications of Newton polygon strata and Traverso’s conjectures for  $p$ -divisible groups* (joint work with Eike Lau and Marc-Hubert Nicole), *Ann. of Math. (2)* 178 (2013), no. 3, 789–834
34. *Integral models in mixed characteristic  $(0,2)$  of hermitian orthogonal Shimura varieties of PEL type, Part II*, *Math. Nachr.* 287, No. 14–15, 1756–1773 (2014)
35. *Extension theorems for reductive group schemes*, *Algebra & Number Theory* 10 (2016), 89–115
36. *Purity of crystalline strata* (joint work with Jinghao Li), *Tunis. J. Math.* 1 (2019), no. 4, 519–538
37. *Good reductions of Shimura varieties of Hodge type in arbitrary mixed characteristic. Part I*, *Math. Nachr.* 293 (2020), no. 12, 2399–2448
38. *Purity for Barsotti–Tate groups in some mixed characteristic situations*, (joint work with Ofer Gabber), *Algebraic Geometry* 8 (2021), no. 4, 490–517
39. *On Lie algebra modules which are modules over semisimple group schemes*, joint with Micah Loverro, to appear in *Manuscripta Mathematica*, 29 pages, version dated 2023-0329

#### **Papers Submitted for Publication or available as preprints**

1. *On matrix invertible completions over commutative rings*, joint with Grigore Călugăreanu and Horia F. Pop, 2023, 44 pages, available at <https://arxiv.org/abs/2303.08413>
2. *The delta-invariant theory of Hecke correspondences on  $A_g$* , monograph joint work with Alexandru Buium, 205 pages
3. *CM-lifts of Isogeny Classes of Shimura  $F$ -crystals over Finite Fields*, 62 pages, 2012 available in the archive and at <http://www.math.binghamton.edu/adrian>
4. *Good reductions of Shimura varieties of Hodge type in arbitrary unramified mixed characteristic, Part II*, 29 pages, available at <https://arxiv.org/pdf/0712.1572.pdf>
5. *Three methods to prove the existence of integral canonical models of Shimura varieties of Hodge type*, 15 pages, available at <https://arxiv.org/abs/0811.2970>

6. *On the Tate and Langlands–Rapoport conjectures for special fibres of integral canonical models of Shimura varieties of abelian type*, 55 pages, available at <https://arxiv.org/abs/1210.6629>
7. *Moduli schemes and the Shafarevich conjecture (the arithmetic case) for pseudo-polarized K3 surfaces*, 46 pages, available at <http://people.math.binghamton.edu/adrian/K3.pdf>

## Work in Progress

### Research Papers in Progress in matured forms

1. *Symmetry, isogeny, homology and filtration properties for finite group schemes over perfect fields*, joint work in progress with Ofer Gabber, 79 pages
2. *The classification of  $p$ -quasi-healthy henselian regular rings of dimension 2*, joint work in progress with Ofer Gabber, 44 pages
3. *Two tori of reductive groups in general position*, joint work in progress with Ofer Gabber, 11 pages
4. Joint work with Alexander Borisov, Ofer Gabber and Sayak Sengupta
5. Joint work with Krishna Kishore and Sailun Zhan

### Research Papers in Progress (started)

1. *Sigma manifolds*, joint work in progress with Ofer Gabber
2. *Faltings–Fontaine categories*, book to split part of the 595 pages manuscript math.NT/0104152 that is available at <http://arxiv.org/abs/math/0104152>
3. *Stratifications of special fibres of good integral models of Shimura varieties of Hodge type*, monograph or survey
4. *Shimura varieties and the Mumford–Tate conjecture, Part II*, first announcement (4 pages) available at <http://math.arizona.edu/adrian/mt2.ps>
5. *Automorphic vector bundles on integral models of Shimura varieties of Hodge type*
6. *Arithmetics of classes of polarized projective varieties: examples, results, and problems*

## Collaborators

- Marc-Hubert Nicole, Inst. Math. de Luminy, Univ. Aix-Marseille II, Marseille, France (four joint papers).
- Thomas Zink, Bielefeld University, Germany (three joint papers).
- Torsten Wedhorn, Paderborn University, Germany (one joint paper).
- Ofer Gabber, IHES, Bures-sur-Yvette, France (two joint papers, four joint manuscripts in progress).
- Eike Lau, Bielefeld University, Germany (one joint paper).
- Jonghao Li, Sequoia Capital Global Equities, Menlo Park, CA,
- Alexandru Buium, University of New Mexico, Albuquerque, NM, USA (one joint monograph).
- Micah Loverro, USA (one joint paper accepted for publication in final form).
- Alexander Borisov, SUNY Binghamton, NY, USA (one joint manuscript in progress).
- Sayak Sengupta, SUNY Binghamton, NY, USA (one joint manuscript in progress).

- Grigore Călugăreanu, Babeş-Bolyai University, Cluj-Napoca, Romania (one joint manuscript).
- Horia F. Pop, Babeş-Bolyai University, Cluj-Napoca, Romania (one joint manuscript).
- Sailun Zhan, SUNY Binghamton, NY, USA (one joint manuscript in progress).
- Krishna Kishore, Indian Institute of Technology (IIT) Tirupati, Andhra Pradesh, India.

### Books on Educational, Philosophical, and Foundational Aspects of Mathematics

1. *The fundamentals of natural integration in life*, Dokia Publishing House Ltd., Romanian language, ISBN 973-9074-57-X, 1998, 1–232 (in collaboration with Angela VasIU)
2. *Geometry for a formative teaching*, Dokia Publishing House Ltd., Romanian language, ISBN 973-9074-46-4, 1998, 1–236 (in collaboration with Angela VasIU)
3. *Projective geometry*, Dokia Publishing House Ltd., Romanian language, ISBN 973-9074-54-5, 1998, 1–184 (in collaboration with Angela VasIU)
4. *Transdisciplinary experience in Romania. Transdisciplinary through Foundation of Geometry*, to appear in the book *Transdisciplinary. Theory and Practice* by Hamton Press. Editor Prof. Basarab Nicolescu (in collaboration with Angela VasIU)
5. *The fundamentals of geometry*, part II, Romanian language, Univ. Babeş-Bolyai, Cluj-Napoca, 2000, 1–129 (in collaboration with Angela VasIU)
6. *The inner geometry*, Romanian language, Editura Albastra, ISBN 973-650-016-0, 2001, 1–94 (in collaboration with Angela VasIU)
7. *Projective plane transformations*, Romanian language, Editura Mega, ISBN 973-86505-4-2, 2003, 1–100 (in collaboration with Angela VasIU)
8. *Sacred mathematics*, Romanian language, Editura Nereamia Napocae, ISBN 973-7951-19-0, 2003, 1–71 (in collaboration with Angela VasIU)

### National/International outreach

Together with Minhyong Kim and Kirti Joshi, we organized a special session on *Arithmetical Algebraic Geometry* during The Joint Mathematics Meetings of the American Mathematical Society, Phoenix, 7-10 January, 2004.

In 2004 I refereed a paper for the proceedings of a conference on “Geometric methods in algebra and number theory” (it appeared in the Progress in Math. Series **235**, Birkhäuser).

In 2007 I refereed a paper for “Manin Festschrift”.

In 2008 I refereed a paper for Moscow Math. J and reviewed two papers for AMS.

In 2009 I reviewed a book for Princeton University Press and eight papers for AMS.

In the period 2007 to 2009 I wrote 13 reviews for Mathematical Reviews (at MathSciNet – Amer Mat. Soc.).

In 2010 I refereed a paper for New York J. Math. and another one for Doc. Math. In 2010 I also reviewed three papers for AMS and wrote an external review for promotion to the full Professor level.

In 2014, together with Ravi Ramakrishna, Thomas Tucker, and Hui June Zhu, we organized the conference *Upstate New York Number Theory Conference*, Cornell University, April 29–May 1, 2011. The conference was supported by NSF and by Cornell University.

In 2012 and 2013 I refereed a paper for Mathematische Zeitschrift and reviewed for Compositio Mathematica.

Together with Ravi Ramakrishna, Thomas Tucker, and Hui June Zhu, we organized the conference *Second Annual Upstate New York Number Theory Conference*, University of Rochester, April 28–29, 2012. The conference was supported by NSF and by University of Rochester.

Together with Ravi Ramakrishna, Thomas Tucker, and Hui June Zhu, we organized the conference *Third Annual Upstate New York Number Theory Conference*, Binghamton University, April 26–28, 2013. The conference was supported by NSF and by the Arithmetic Seminar of Binghamton University.

In 2014 I refereed papers for J. Ramanujan Math. Soc. and for Proceedings of Amer. Math. Soc.

Together with Ravi Ramakrishna, Thomas Tucker, and Hui June Zhu, we organized the conference *Fourth Annual Upstate New York Number Theory Conference*, SUNY at Buffalo.

In 2015 I refereed a paper for Transactions of the American Mathematical Society

In 2016 I refereed papers for Izv. Ross. Akad. Nauk Ser. Mat. and Math. Nachr. and I reviewed paper for Crelle and Amer. Math. J.

In 2017 I refereed a paper for Pacific Journal of Mathematics.

In 2019 I refereed a paper for Transactions of the American Mathematical Society and I reviewed (experts opinion) papers for Algebra & Number Theory.

In 2020 I refereed a paper for Indiana Univ. Math. J., I reviewed (experts opinion) papers for Algebra & Number Theory and Asian Jour. Math., and I reviewed a research proposal for NWO Talent Programme Veni (NWO=The Dutch Research Council).

## Graduate Students

- Xiao Xiao, completed his Ph.D. in April 2011.
- Jinghao Li, completed his Ph.D. in April 2015.
- Ding Ding, complete his Ph.D. in December 2015.
- Micah Loverro, to complete his Ph.D. Thesis in the future (currently not enrolled graduate student)
- Sarah Lamoureux, to complete his Ph.D. Thesis by August 2023.
- Sayak Sengupta, to complete his Ph.D. Thesis by June 2024.
- Hari Asokan, to complete his Ph.D. Thesis by June 2025 (tentative).

## Scholarly Presentations

### Local Seminars

“Integral canonical models of Shimura varieties of preabelian type”:

06/08/95 Max-Planck Institute, Bonn, Germany

12/08/95 ETH, Zürich

10/09/96 Univ. of California at Berkeley

“Points of integral canonical models of Shimura varieties of preabelian type”:

12/15/95 ETH, Zürich

11/20/96 Univ. of California at Berkeley

“A conjecture of Milne (and its applications)”:

05/07/97 Univ. of California at Berkeley

09/23/03 Univ. of Arizona (Part I)

09/30/03 Univ. of Arizona (Part II)

“Shimura  $\sigma$ -crystals”:

11/22/96 Univ. of California at Berkeley

“The canonical Lie stratification and the integral Manin problem”:

10/15/97 Univ. of California at Berkeley

“Shimura varieties and the Mumford-Tate conjecture”:

10/22/97 Univ. of California at Berkeley

11/27/01 Univ. of Arizona

“Crystalline cohomology: G. Faltings’ approach in the context of Shimura varieties”:

11/21/97 Univ. of California at Berkeley

“Connections and coordinates for  $p$ -divisible groups”:

05/98 Univ. of California at Berkeley

“Integral canonical models of Shimura varieties of preabelian type”:

10/03/00 Univ. of Arizona (Part I)

11/07/00 Univ. of Arizona (Part II)

11/27/00 Univ. of Arizona (Part III)

01/30/01 Univ. of Arizona (Part IV)

02/20/01 Univ. of Arizona (Part V)

“The boundedness principle, the purity principle, the generalized Manin problem, the ultimate stratification and Bruhat decompositions in the F-context”:

04/03/01 Univ. of Arizona (Part I)

04/17/01 Univ. of Arizona (Part II)

- “The unitary trick”:  
10/23/01 Univ. of Arizona
- “On the generalization of a result of Serre”:  
12/04/01 Univ. of Arizona
- “The mod  $p$  classification of Shimura  $F$ -crystals”:  
04/08/03 Univ. of Arizona (Part I)  
04/15/03 Univ. of Arizona (Part II)
- “Shimura varieties, K3 surfaces, and Hecke-orbits”:  
11/18/98 Univ. of California at Berkeley  
09/14/99 Univ. of Utah
- “The Langlands-Rapoport conjecture”:  
04/28/99 Univ. of California at Berkeley
- “Artin-Schreier systems and their applications”:  
10/03/00 Univ. of Arizona
- “The  $p > 2$  theory of Shimura varieties”:  
02/15/00 Univ. of Utah
- “Generalized Serre–Tate theory”:  
02/22/00 Univ. of Utah  
09/26/00 Univ. of Arizona (Part I)  
10/01/02 Univ. of Arizona (Part II)  
10/08/02 Univ. of Arizona (Part III)  
07/09/13 Humboldt University, Berlin, Germany
- “On 2-adic Galois representations for abelian surfaces over rationals”:  
11/18/03 Univ. of Arizona
- “Integral models in mixed characteristic  $(0,2)$  of Shimura varieties of PEL type”:  
04/13/04 Univ. of Arizona
- “Good reductions of abelian varieties over number fields that have compact factors”:  
09/14/04 Univ. of Arizona
- “Extension theorems for group schemes”:  
11/09/04 Univ. of Arizona
- “Purity of stratifications”:  
09/27/05 Univ. of Arizona
- “Integral canonical models”:  
11/22/05 Univ. of Arizona
- “Reconstructing  $p$ -divisible groups from their truncations of small level”  
11/28/06 Univ. of Arizona
- “Traverso’s isogeny conjecture”  
12/04/06 Univ. of Arizona  
10/23/07 Binghamton University
- “Projective integral models of Shimura varieties of Hodge type with compact factors”:  
06/20/07 Max-Planck Inst., Bonn, Germany
- “Bruhat  $F$ -decompositions for reductive groups in positive characteristic. Part I”:  
12/01/09 Binghamton University
- “Bruhat  $F$ -decompositions for reductive groups in positive characteristic. Part II”:  
12/08/09 Binghamton University
- “Purity in algebraic geometry”:  
03/23/10 Binghamton University
- “On a motivic conjecture of Milne”:  
03/02/12 Binghamton University  
22/02/13 UC San Diego
- “Cohomological invariants of projective varieties in positive characteristic”:  
03/01/13 Binghamton University

### Outside Seminars

- “Integral canonical models of Shimura varieties of preabelian type”:



07/05/95 Inst. for Mathematics, Heidelberg  
 07/11/95 Univ. of Wuppertal  
 04/24/96 Univ. of Strasbourg  
 “Shimura varieties and the Mumford-Tate conjecture”:  
 10/29/98 Univ. of Texas at Austin  
 03/29/99 Univ. of Utah  
 “Generalized Serre–Tate theory”:  
 02/08/00 Univ. of Irvine  
 “Integral aspects of Shimura varieties via one example”:  
 11/14/00 Univ. of Irvine  
 “Surjectivity of p-adic Galois representations, part I”:  
 09/17/07 Cornell University  
 “Surjectivity of p-adic Galois representations, part II”:  
 09/24/07 Cornell university  
 “Mumford–Tate conjecture via examples”:  
 12/17/07 Indiana University  
 “Good reductions of abelian varieties over number fields”:  
 2/25/08 Cornell University  
 “Morita conjecture on everywhere good reduction of abelian varieties”:  
 04/21/08 U of Pennsylvania  
 “Morita conjecture on projective integral models of Shimura varieties of Hodge type”  
 05/01/08 Columbia University  
 “Classification and purity results for finite flat group schemes over regular rings”  
 06/26/08 Paderborn University, Germany  
 07/06/08 IHES, Bures-sur-Yvette, France  
 “Invariants, Stratifications, Endomorphisms, and Traverso’s Conjectures for p-divisible Groups”  
 08/11/09 IHES, Bures-sur-Yvette, France  
 “Integral canonical models of Shimura varieties of Hodge type”:  
 09/18/08 McGill University, Canada  
 04/24/09 SUNY at Buffalo  
 12/21/11 TIFR, Mumbai, India  
 “On the Tate and Langlands–Rapoport conjectures for Shimura varieties of Hodge type”:  
 09/15/08 IAS, Princeton  
 “Reconstructing p-divisible groups from their truncations of small level”:  
 11/19/08 Cornell University  
 11/28/08 TIFR, Mumbai, India  
 “Purity of level m stratifications”:  
 12/01/08 TIFR, Mumbai, India  
 “On the Mumford–Tate conjecture”  
 12/04/08 TIFR, Mumbai, India  
 “Subtle invariants and Traverso’s conjectures for p-divisible groups”  
 09/16/10 Penn State University  
 10/24/11 UPenn  
 11/10/11 Princeton University  
 09/20/12 Purdue University  
 “Purity results in algebraic geometry”  
 11/30/12 UPenn  
 “On the classification of p-healthy regular schemes”  
 02/06/19 University of Rochester  
 03/01/19 Cornell University

### Colloquia in U.S.A.

“A conjecture of Milne and its applications”:  
 09/24/97 Univ. of New Mexico, Albuquerque  
 “Artin-Schreier systems and their applications”:  
 03/30/99 Univ. of Utah

“The  $p > 2$  theory of Shimura varieties”:

02/10/00 Univ. of Irvine

02/25/00 Univ. of New Hampshire

03/00 Univ. of Arizona

“Reconstructing  $p$ -divisible groups from their truncations of small level”:

01/21/07 Indiana University

05/01/09 SUNY at Albany

“Good reductions of abelian varieties over number fields”:

12/05/07 Kansas State University

12/10/07 Binghamton University

01/10/08 McGill University, Canada

01/23/08 Wayne State University

“Cohomological invariants of projective varieties in positive characteristic.”

21/02/13 UC San Diego

“Purity of Crystalline strata”:

06/25/2014 I.H.E.S., Bures-sur-Yvette, France

### Colloquia outside U.S.A.

“Reconstructing  $p$ -divisible groups from their truncations of small level”:

02/06/07 Nanyang Technological University, Singapore

04/26/07 Bielefeld University, Germany

“On the Mumford–Tate conjecture.”

07/17/08 Milano University, Italy

“An Introduction to Positive Characteristic.”

02/19/15 IISER, Thiruvananthapuram, Kerala, India

### Series of Lectures

1. “ $P$ -divisible Groups” (series of three lectures of 90 minutes):

04/07 Bielefeld University, Germany

04/11/07 “ $P$ -divisible Groups, Part I: Classification Problems”

04/19/07 “ $P$ -divisible Groups, Part II: Stratifications of Global Versal Deformations”

04/25/07 “ $P$ -divisible Groups, Part III: Formal Lie Group Structures on Formal Deformation Subspaces”

2. “Geometry of Shimura varieties of Hodge type over finite fields”, short course of 3 lectures during the Summer School “Higher-dimensional geometry over finite fields”, June 25 - July 06, 2007, Mathematisches Institut, Georg-August-Universität Göttingen, Germany

3. “Special topics on moduli spaces” (series of three lectures of 90 minutes):

06-07/08 Bielefeld University, Germany

06/18/08 “Towards the Langlands–Rapoport conjecture for Shimura varieties of Hodge type, Part I”

06/19/08 “Towards the Langlands–Rapoport conjecture for Shimura varieties of Hodge type, Part II”

07/09/08 “Good reductions of abelian varieties over number fields”

### Special Sessions, Symposia, and Conferences

1. 06/09/1995 “Integral canonical models ...”, on the occasion of Prof. F. Oort’s 60th Birthday, (Univ. of Utrecht, Utrecht, Holland)

2. 07/16/1996 “Points of integral canonical models of Shimura varieties of preabelian type”, Durham Symposium on Galois Representations in Arithmetic Algebraic Geometry, (Univ. of Durham, England)

3. 07/1996 “Shimura varieties and the Mumford-Tate conjecture”, Durham Symposium ..., (Univ. of Durham, England)

4. 07/28/1996-08/03/1996 invited to attend and to give a talk to “Arithmetic Algebraic Geometry”, (Math. Forschungsinstitut Oberwolfach, Germany); not attended due to visa problems

5. 05/29/1997 “A conjecture of Milne”, during the special p-adic semester, (Institute H. Poincaré, Paris, France)
6. 06/1997 “Shimura varieties and the Mumford-Tate conjecture”, during the special p-adic semester, (Institute H. Poincaré, Paris, France)
- 11/08/1997 “The canonical Lie stratification...”, 928th AMS meeting (Univ. of Mexico, Albuquerque, U.S.A.)
7. 08/17/1998 “The canonical Lie stratification...”, ICM-1998 Satellite Conference (Essen University, Essen, Germany)
8. 03/19/1999 “Shimura varieties and the Mumford-Tate conjecture”, 941th AMS meeting (Univ. of Illinois at Urbana-Champaign, Urbana, U.S.A.)
9. 09/26/1999 “A conjecture of Milne”, 946th AMS meeting, Univ. of Utah, Salt Lake City, U.S.A.
10. 07/05/2001 “On the classification of p-divisible groups and objects”, 22èmes Journées Arithmétiques, 2-6 July, 2001 (Univ. of Lille, Lille, France)
11. 11/11/2001 “On the classification of p-divisible groups and objects”, Workshop on reductions of Shimura varieties and related spaces: geometry and representation theory, Nov. 7-11, 2001 (Fields Institute, Toronto, Canada)
12. 03/??/2003 invited as a plenary speaker to the Workshop on reductions of Shimura varieties and related spaces, March 4-8, 2003, (Fields Institute, Toronto, Canada); not attended due to visa problems
13. 06/16/2005 “Projective integral models of Shimura varieties of Hodge type with compact factors”, the 2nd AMS-DMV-OeMG joint meeting, June 16-19, 2005, (Univ. of Mainz, Mainz, Germany)
14. 04/04/2006 “Projective integral models of Shimura varieties of Hodge type with compact factors”, conference Profinite Arithmetic Geometry and related Moduli Spaces, Red Lodge, Montana, U.S.A., April 3-7, 2006
15. 08/01/2007 “Reconstructing p-divisible groups from their truncations of small level”, the 1st AMS-PTM joint meeting, July 31-August 3, 2007, (Univ. of Warsaw, Warsaw, Poland)
16. 08/07/2008 “On the Tate and Langlands-Rapoport conjectures for Shimura varieties”, Arithmetic Algebraic Geometry Workshop, Oberwolfach (Germany), August 3-9, 2008
17. 06/17/2009 “Dimensions of group schemes of automorphisms of truncated Barsotti-Tate groups”, Conference on Arithmetic Algebraic Geometry on the occasion of 60th anniversary of Thomas Zink, Bielefeld University, Germany
18. 11/15/2009 “Boundedness results for finite flat group schemes over discrete valuation rings of mixed characteristic”, Graduate Conference in Algebra and Topology, Binghamton University, Vestal, NY, November 14-15, 2009
19. 07/14/2010 “Traverso’s conjectures for p-divisible groups”, XIth meeting of the Canadian Number Theory Association, Acadia University, Wolfville, Nova Scotia, Canada, July 11-16, 2010
20. 10/02/2010 “Purity results in algebraic geometry in positive characteristic”, 1062th AMS meeting, Syracuse University, Syracuse, NY, U.S.A.
21. 05/06/2012 “Arithmetic properties of good integral models of Shimura varieties of Hodge type” Arithmetic Geometry of Orthogonal and Unitary Shimura Varieties, BIRS, Banff, Alberta, Canada, June 3-8, 2012
22. 08/09/2012 “Subtle invariants for p-divisible groups and Traverso’s conjectures”, Arithmetic Algebraic Geometry Workshop, Oberwolfach (Germany), August 5-11, 2012
23. 06/13/2014 “Purity of Crystalline strata”, 60th Anniversary of Gerd Faltings, MPI, Bonn, Germany
24. 06/24/2014 “Purity of Crystalline strata”, Journées arithmétiques à Villetaneuse, Université Paris 13 Villetaneuse, Paris, France
25. 06/14/2018 “On the classification of p-healthy regular schemes”, 60th Anniversary of Ofer Gabber, IHES, Bures-sur-Yvette, France

## Grants and Contracts

I. Period: July 1997 – June 2000, NSF grant DMS 97-05376, PI Kenneth Ribet, co-PI Adrian Vasiu

Project Title: “The Arithmetic of Integral Canonical Models of Shimura Varieties of Preabelian Type”

Institution: University of California, Berkeley, U.S.A.

Funds: total amount available to co-PI and UC at Berkeley \$47,900 U.S.

II. Period: July 2009 – June 2012, NSF grant DMS 0900967, PI Adrian Vasiu.

Project Title: “Points of Integral Models of Shimura Varieties of Hodge Type and the Tate and Langlands–Rapoport Conjectures”

Institution: Binghamton University (SUNY), U.S.A.

Funds: total amount \$156,933 U.S.

III. Period: March 1, 2011 to February 28, 2015, NSF grant DMS 1100033, PI Adrian Vasiu.

Project Title: “Colaborative Research: Upstate New York Number Theory Conference”.

Institution: Binghamton University (SUNY), U.S.A.

Funds: total amount \$11,176 U.S. (for the organization of the conference *Third Annual Upstate New York Number Theory Conference* that took place at Binghamton University, April 26–28, 2013).

IV. Period: September to December 2011, Grant from IAS, Princeton, NJ to be a member of IAS during Fall 2011.

Institution: Binghamton University (SUNY), U.S.A.

Funds: total amount \$23,300 U.S.