# Karol Andrzej Palka

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| **Current position** | Associate Professor – Institute of Mathematics of the Polish Academy of Sciences<br>Director |

## EDUCATION AND SCIENTIFIC DEGREES

| 2018 | Habilitation (Hons), Institute of Mathematics PAS,<br>*Almost minimal models and the Coolidge-Nagata conjecture* |
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| 2010 | Master's Degree in Physics, Faculty of Physics, University of Warsaw,<br>supervisors: Prof. V. Bouchard (U. Alberta, Canada), Prof. J. Pawełczyk (UW),<br>*Calabi-Yau varieties and their role in String Theory* |
| 2009 | PhD i mathematics (Hons), Faculty of Mathematics, Informatics and Mechanics,<br>University of Warsaw, supervisor: prof. Mariusz Koras, *Singular Q-homology planes* |
| 2004 | Master's degree in mathematics (Hons), Faculty of Mathematics, Informatics and<br>Mechanics of the University of Warsaw, supervisor: prof. Z. Marciniak,<br>*Group homomorphism inducing isomorphism on homology* |

## POSITIONS

| 2018 – now | Associate Professor – Institute of Mathematics PAS |
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| 2011 – 2018 | Assistant Professor – Institute of Mathematics PAS |
| 2010 – 2012 | Postdoctoral fellow – Universite du Quebec a Montreal, Canada<br>CIRGET – Inter-university Center for Geometrical and Topological Research |
| 2009 – 2010 | Postdoctoral fellow – McGill University, Montreal, Canada<br>Department of Mathematics and Statistics |
| 2009 | Postdoctoral fellow – Assistant Professor – Concordia University, Montreal, Canada<br>Mathematics Department |
| 2008 – 2009 | Graduate Assistant – IM PAS |
| 2004 – 2009 | PH.D. student – Faculty of Mathematics, Informatics and Mechanics, University of Warsaw |

## FUNTIONS AND MEMBERSHIPS

| 2019 – 2021 | Chairman of the Polish Young Academy PAS |
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| 2016 – 2021 | Member of the Polish Young Academy, PAS |
| 2018 – | Member of the Scientific Council of IM PAS |
| 2018 – 2022 | Member of the jury of the K. Kuratowski Award (Chairman 2021) |

| 2017 – 2018 | Member of the advisory team of the President of the PAS for the reform of PAS |
| 2017 – | Member of the Committee of Mathematics PAS |
| 2017 – | Member of the Committee of Physics PAS |

## SUPERVISING

**2021**  mgr Jarosław Ławnicki (MIM UW, Hons)
*Embeddings of curves into surfaces and the complement problem*
2nd prize in the Marcinkiewicz Competition, Polish Mathematical Society, 2021

**2019**  dr Tomasz Pełka (IM PAS, Hons)
*Singular Q- homology planes satisfying the Negativity Conjecture*

**2016**  mgr Jakub Pawlikowski (MIM UW, Hons)
*Boundaries of quasi-projective surfaces*
1st prize in the Marcinkiewicz Competition, Polish Mathematical Society, 2017

**2015**  mgr Tomasz Pełka (Jagiellonian University, Hons)
*Planar cuspidal curves with C\*\*- fibered complements*
1st prize in the Marcinkiewicz Competition, Polish Mathematical Society, 2015

## ORGANIZATION OF SELECTED CONFERENCES AND SEMINARS

**V 2018**  Conference in affine algebraic geometry, Banach Center

**2013 – 19**  The algebra and geometry of modern physics, seminar, Physics Department (with P. Sułkowski and R. Suszek)

**IX 2016**  International Autumn school on algebraic geometry, Łukęcin

**2016 – 2020**  Complex affine geometry seminar, IM PAS

**2012**  Affine algebraic geometry workshop, Banach Center

**2011**  Minimal Model Program seminar, UQAM, Montreal

**2009 – 11**  Algebraic geometry seminar, UQAM, Canada, (with z S. Lu i P. Russell)

**2009**  Mirror symmetry seminar, IM PAS

## RESERARCH FUNDING

**2022 – 2026**  OPUS 21, NCN, 565 200 PLN, 2021/41/B/ST1/02062
*Effective methods in affine and birational geometry*

**2016 – 2021**  SONATA BIS 5, NCN, 774 000 PLN, 2015/18/E/ST1/00562
*Modern methods in complex affine geometry*

**2013 – 2016**  SONATA 3, NCN, 150 740 PLN, 2012/05/D/ST1/03227
*The geometry of contractible low-dimensional affine varieties*

**2013 – 2015**  Homing Plus, FNP, 320 000 PLN, 2012-6/9
*Embeddings and automorphisms of lowdimensional rational varieties*

**2013 – 2015**  Iuventus Plus, MNiSW, 199 000 PLN, 0382/IP3/2013/72
*Varieties and subvarieties on non-general type and their role in degeneration phenomena*

**REVIEWING**

Duke Mathematical Journal, Algebraic Geometry, Advances in Mathematics, International Mathematics Research Notices, Transaction of the AMS, Mathematische Nachrichten, Mathematische Zeitschrift, Journal of Algebra, Journal of the London Mathematical Society, CRM Proceedings & Lecture Notes, Journal of Algebra and Applications, Revista Matemática Complutense, MathScinet, Zentralblatt


**SELECTED INVITED TALKS**

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| III 2022 | *Non-proper etalé endomorphisms of smooth surfaces*, Nicea, France |
| III 2022 | *Almost minimal models and the classification of log del Pezzo surfaces of rank 1*, research seminar, Warsaw, Poland |
| XI 2021 | *Faces of singularity theory*, conference, Marseille, France |
| IX 2021 | *Singularities* (x 3), workshop, Oberwolfach, Germany |
| III 2020 | *On the structure of open surfaces of negative Kodaira dimension*, Osaka, Japan |
| V 2019 | *Singularities of planar curves*, conference *Geometry and topology of singularities*, Budapest, Hungary |
| II 2018 | *Update on the classification of rational cuspidal curves*, Tokyo, Japan, conference *Polynomial rings and affine algebraic geometry* |
| V 2018 | *On the log minimal model program with fractional boundaries and its applications to planar curves*, San Jose, California, USA, AIM, Symplectic 4-manifolds through branched coverings |
| IV 2018 | *Coolidge-Nagata conjecture and generalizations*, Krakow, Poland, conference *Modern and classical aspects of algebraic surfaces* |
| VI 2018 | *On the number of cusps of rational cuspidal curves*, Warsaw, Poland, *Affine Algebraic geometry conference* |
| XI 2018 | *Generalized Jacobian conjecture*, Loughborough, Great Britain, conference *Fano varieties and their automorphisms* |
| 2017 | *How to classify Q-acyclic surfaces of log general type*, Osaka, Japan, *Affine geometry conference* |
| 2016 | *On the equivariant Generalized Jacobian conjecture*, Grenoble, France, conference *Complex affine geometry, hyperbolicity, complex analysis* |
| 2016 | *What's new in Q-acyclic surfaces?*, Jevnaker, Norway, conference *Frontiers in elliptic holomorphic geometry* |
| 2015 | *On C\*-embeddings in to the affine plane from the point of view of the log MMP*, Bangalore, India, conference A*lgebraic surfaces and related topics* |
| 2015 | *On singular embeddings of a complex projective line into the plane*, Enney, Switzerland, Swiss-French workshop on algebraic geometry |
| 2015 | *Surfaces of log general type and the log MMP with fractional boundary*, Osaka, Japan, *Affine algebraic geometry meeting* |
| 2015 | *The geometry of rational cuspidal curves in the complex projective plane*, conference *Algebraic geometry*, Salt Lake City, USA |

| 2014 | *On the log minimal model program with fractional boundary and its applications*, Banff, Canada, workshop *Positivity of Linear systems and vector bundles* |
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| 2014 | *On the log MMP in dim. 2 and its application to the Coolidge-Nagata problem*, Tel Aviv, Israel, research seminar |
| 2013 | *On the Coolidge-Nagata conjecture*, Seoul, South Korea, *Workshop on algebraic surfaces* |
| 2012 | *On rectifiability of rational planar curves*, Moscow, Russia, *conference Birational and affine geometry* |
| 2012 | *New results on the Coolidge-Nagata conjecture*, Montreal, Canada, *The topology of algebraic varieties* |
| 2009 – 2011 | *Classification of Q-homology planes* (Osaka, Japan, *Affine geometry conference*), *On methods of affine geometry* (Toronto, Canada, *Arithmetic and geometry of algebraic Varieties*), *Classification of Q-homology planes* (Montreal, Canada, conference Topology of algebraic varieties) |

## TEACHING

| 2021, 2005 | Lectures for the Polish Children's Fund, *Solving higher-level equations, Special relativity* |
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| 2009 – 12 | McGill University, Concordia University: Topics in Algebraic Geometry, Applied Linear Algebra, Linear Algebra and Geometry, College Algebra |
| 2005 – 09 | University of Warsaw: algebra 1 (groups, rings), algebra 2 (modules, Galois theory), differential geometry, analytic functions, discrete mathematics, algebraic surfaces, linear algebra |

## PRIZES AND DISTINCTIONS

| 2020 – 2023 | Minister's scholarship for outstanding young scientists |
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| 2017 | Wacław Sierpiński Prize for scientific achievements in the field of mathematics – awarded by the Faculty of Sciences and Earth Sciences of the PAS |
| 2015 | Invited lecture, Algebraic Geometry, Salt Lake City, USA, algebraic geometry community conference |
| 2012 – 2015 | Scholarship and grant from the Foundation for Polish Science - Homing Plus |
| 2010 – 2011 | Postdoctoral Fellowship from the Research Fund of Quebec Province, Canada |

## PUBLICATIONS

https://www.impan.pl/~palka/publications.html

## SELECTED SCIENTIFIC ACHIEVEMENTS

https://www.impan.pl/~palka/research.pdf