Olof Sisask

Degrees

2005–2009 **PhD**, University of Bristol, Nov 2009, advised by Ben Green. I started my PhD at the University of Bristol, spent the first year at MIT and the remaining time at the University of Cambridge.

2001–2005 **MMath**, University of Warwick. First class.
Grade breakdown (first–fourth year): 92%, 90%, 97%, 92%.
Outstanding Academic Achievement award.

Docentship Stockholm University, 2020

Positions

Aug 2021–present Associate Professor, Uppsala University

Mar 2020–present Co-founder dogl

Sep 2020–Aug 2021 Affiliated Researcher, Stockholm University

Sep 2019–Aug 2020 Senior Lecturer, Mathematics, Stockholm University. Research time: 30%

Aug 2018–Aug 2019 Senior Lecturer, Mathematics, Uppsala University. Research time: 20%

Jan 2014–Aug 2018 Researcher, personal VR grant 2013-4896, Mathematics, KTH

Oct 2012–Dec 2013 Postdoctoral research fellow, Mathematics, KTH

Oct 2009–Sep 2012 EPSRC postdoctoral research fellow, personal grant EP/G050198/1, Mathematics, Queen Mary, University of London

Shorter positions:

Feb–Mar 2017 Visiting scientist, Simons Institute, UC Berkeley

Mar–Jun 2011 Visiting fellow, Isaac Newton Institute, Cambridge

Dec 2010–Mar 2011 Visiting researcher, University of British Columbia

Nov 2008 Visiting researcher, MSRI

Jun–Sep 2006 Software engineer, Elite Sport Ltd, London

Jul–Sep 2005 Research assistant, University of Warwick

Leaves of absence

Parental leave totalling about 12 months since 2010.

Misc

Year of birth 1984

Languages Swedish–English bilingual

Appointments and board participation

2018 Co-organiser of the workshop *Additive combinatorics and its applications*, held in Aug 2018 at the American Institute of Mathematics, San Jose

2017 PhD examination committee (Marc Vinyals), Computer Science Department, KTH

2016 PhD examination committee (Dmitrii Zhelezov), Chalmers

2012 Gender equality working group, Queen Mary, University of London

Outreach

Sep 2019 Stockholm Math Circle: public lecture for about 200 high school students

Dec 2018 Public lecture for about 90 people at Senioruniversitetet in Stockholm

Mar 2018 Pi day: public lecture for about 200 grade 9 students at the Royal Swedish Academy of Sciences' Pi day

Oct 2017 Kleinerdag: co-organiser of this teacher development day at the Royal Swedish Academy of Sciences, working with around 15 teachers active in grades 7–9

2014–2018 Ran sessions for school students coming to the math department at KTH for work experience

Publications

1. *Breaking the logarithmic barrier in Roth's theorem on arithmetic progressions*, with T. F. Bloom, submitted. Available on arXiv.org.
2. *Freiman isomorphisms between characters and linear limits of groups*, in preparation.
3. *On the diameters of large sum-free subsets of* $\mathbb{Z}/p\mathbb{Z}$, submitted.
4. *Convolutions of sets with bounded VC-dimension are uniformly continuous*, Discrete Analysis 2021:1 25pp.
5. *Logarithmic bounds for Roth's theorem via almost-periodicity*, with T. F. Bloom, Discrete Analysis 2019:4 20pp.
6. *Roth's theorem for four variables and additive structures in sums of sparse sets*, with T. Schoen, Forum of Mathematics, Sigma 4 (2016), e5 (28 pages).
7. *Convergence results for systems of linear forms on cyclic groups, and periodic nilsequences*, with P. Candela, SIAM J. Discrete Math. 28 (2) (2014), 786–810.
8. *Arithmetic progressions in sumsets and* L^p*-almost-periodicity*, with E. Croot and I. Łaba, Combin. Probab. Comput. 22 (3) (2013), 351–365.
9. *A removal lemma for linear configurations in subsets of the circle*, with P. Candela, Proc. Edinburgh Math. Soc. 56 (3) (2013), 657–666.
10. *On the asymptotic maximal density of a set avoiding solutions to linear equations modulo a prime*, with P. Candela, Acta Math. Hungar. 132 (3) (2011), 223–243.
11. *A probabilistic technique for finding almost-periods of convolutions*, with E. Croot, Geom. Funct. Anal. 20 (6) (2010), 1367–1396.
12. *A new proof of Roth's theorem on arithmetic progressions*, with E. Croot,

Proc. Amer. Math. Soc. 137 (2009), 805–809.

13. *On the maximal number of three-term arithmetic progressions in subsets of* $\mathbb{Z}/p\mathbb{Z}$, with B. Green, Bull. London Math. Soc. 40 (2008), 945–955.

Talks

Below is a selection of the invited seminar talks, conference talks and colloquia I have given over the past few years.

May 2021	Arithmetic (and) Harmonic Analysis, Institut Mittag-Leffler
Mar 2021	Analysis and additive combinatorics seminar, University of Georgia
Feb 2021	Quebec–Vermont number theory seminar, Montreal
Feb 2021	Joint number theory, analysis and probability seminar, Gothenburg
Nov 2020	Math Conversations seminar, Institute for Advanced Study
Oct 2020	Wednesday Zoom seminar, Stockholm
Oct 2020	Math Department Colloquium, UC Berkeley
Oct 2020	Combinatorics seminar, University of Bristol
May 2020	Combinatorics seminar, University of Warwick
Nov 2019	Analysis seminar, Stockholm University
Dec 2018	Probability and statistics seminar, Uppsala University
Aug 2018	Additive combinatorics and its applications workshop, American Inst of Math
Jun 2018	Pseudorandomness reunion workshop, Simons Institute, UC Berkeley
Jun 2018	Annual meeting of the Swedish Mathematical Society, Gothenburg
May 2018	Georgia Discrete Analysis Conference, University of Georgia
Oct 2017	Additive Combinatorics and Applications workshop, CMSA, Harvard
Mar 2017	Pseudorandomness programme, Simons Institute, UC Berkeley