

Robbert Dijkgraaf

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Basic Information



Name: Robbert Dijkgraaf
(Jan 1960–)

Birth Location:	Ridderkerk, Netherlands
Titles:	Physicist String Theorist
Affiliation:	Institute for Advanced Study University of Amsterdam
Honor:	Spinoza Prize (2003)

1. Introduction

Robertus Henricus "Robbert" Dijkgraaf FRSE (born 24 January 1960) is a Dutch theoretical physicist and string theorist. He is the director and Leon Levy professor at the Institute for Advanced Study in Princeton, New Jersey,^[1] and a tenured professor at the University of Amsterdam.

2. Early Life and Education

Robertus Henricus Dijkgraaf was born on 24 January 1960 in Ridderkerk, Netherlands.^[2] Dijkgraaf attended the Erasmiaans Gymnasium in Rotterdam, Netherlands.^[2]

He started his education in physics at Utrecht University in 1978. After completing his Bachelor's degree equivalent in 1982 he briefly turned away from physics to pursue painting at the Gerrit Rietveld Academie. In 1984, he returned to Utrecht University, to start on his master's degree in theoretical physics.

After obtaining his MSc degree, he continued working towards his PhD under supervision of Nobel laureate Gerard 't Hooft.^[2] He studied together with the twins Erik and Herman Verlinde.^[2] The original arrangement was that only one of the trio would work on string theory, but all three ended up writing their thesis on this subject. Dijkgraaf obtained his doctorate in 1989 *cum laude*. His thesis was titled *A Geometrical Approach to Two Dimensional Conformal Field Theory*.^[3]

For a few years he worked as a postdoctoral researcher at the Institute for Advanced Study, working alongside Edward Witten.^[2]

3. Work

In 1992, he was appointed professor of mathematical physics at the University of Amsterdam,^[2] where he held the chair of mathematical physics until 2004, when he was appointed distinguished professor at the same university.^[4]

From 2008 to 2012 he was president of the Royal Netherlands Academy of Arts and Sciences. He was elected as one of the two co-chairs of the InterAcademy Council for the period 2009 to 2013.

Starting 2012, Dijkgraaf became the director of the Institute for Advanced Study, an independent academic institution located in the town of Princeton, New Jersey.^[5] On that date, he stepped down from his position as president of the Royal Netherlands Academy of Arts and Sciences.

He has served on numerous boards including at the Teylers Museum and the NEMO Science Museum.^[2]

He regularly appears on Dutch television and has a (monthly) column in the Dutch newspaper *NRC Handelsblad*.

4. Awards and Honors

In 1998 Dijkgraaf was an Invited Speaker at the International Congress of Mathematicians in Berlin.^[6]

In 2003, Dijkgraaf was awarded the Spinoza Prize.^[7] In doing so he became the first recipient of the award whose advisor also was a recipient ('t Hooft received the first Spinoza Prize in 1995). He used part of his Spinoza Prize grant to set up a website targeted at children and promoting science: Proefjes.nl.

Dijkgraaf is an elected Member of the Royal Netherlands Academy of Arts and Sciences since 2003 and of the Royal Holland Society of Sciences and Humanities.

On 30 May 2012, he was elected an Honorary Member of both the Royal Netherlands Chemical Society and the Netherlands' Physical Society.^[8] On 5 June 2012, Dijkgraaf was appointed a Knight of the Order of the Netherlands Lion.^[9] In 2012, he became a Fellow of the American Mathematical Society.^[10]

He was elected an Honorary Fellow of the Royal Society of Edinburgh in 2013.

He received honorary doctorates from the Vrije Universiteit Brussel and Leiden University in 2019.^[11] In 2019, Dijkgraaf was awarded the inaugural Iris Medal for Excellent Science Communication, presented at the Evening of Science & Society in the Ridderzaal in The Hague, by Ingrid van Engelshoven, Minister of Education, Culture, and Science, in the presence of His Majesty King Willem-Alexander.

5. Research

Dijkgraaf's research focuses on string theory and the interface of mathematics and physics in general.^[1] He is best known for his work on topological string theory and matrix models, and his name has been given to the Dijkgraaf-Witten invariants and the Witten-Dijkgraaf-Verlinde-Verlinde formula.

6. Personal Life

He lives in Princeton, New Jersey.^[12] Dijkgraaf is married to the author Pia de Jong [nl] and has three children.^[13] Their daughter Charlotte was born with a rare type of Leukemia and was the subject of book written by her mother Pia de Jong, *Saving Charlotte: A Mother and the Power of Intuition*.^[13]

7. Bibliography

7.1. Research Articles

Dijkgraaf has co-authored and published more than 70 research articles in the field of string theory and physics, with many other researchers including: Cumrun Vafa, Lotte Hollands, Erik Verlinde, Herman Verlinde, Hiroshi Ooguri, Gregory Moore, Rajesh Gopakumar, Sergei Gukov, Miranda Cheng, and others. This is a select list of these works:

- Dijkgraaf, Robbert; Vafa, Cumrun (September 2009). "Toda Theories, Matrix Models, Topological Strings, and N=2 Gauge Systems". p. 41. arXiv:0909.2453.
- Dijkgraaf, Robbert; Orlando, Domenico; Reffert, Susanne (March 2009). "Quantum crystals and spin chains". *Nuclear Physics B* 811 (3): 463–490. doi:10.1016/j.nuclphysb.2008.11.027. Bibcode: 2009NuPhB.811..463D.
- Dijkgraaf, Robbert; Hollands, Lotte; Sulkowski, Piotr; Vafa, Cumrun (September 2007). "Supersymmetric Gauge Theories, Intersecting Branes and Free Fermions". *Journal of High Energy Physics* 2008 (2): 106. doi:10.1088/1126-6708/2008/02/106.

7.2. Books

- Dijkgraaf, Robbert (2019) (in Dutch). Het isgelijktken. Amsterdam, Netherlands: Publisher Prometheus BV (Uitgeverij Prometheus). ISBN 9789044640939.
- Flexner, Abraham (2017). The Usefulness of Useless Knowledge. Robbert Dijkgraaf (Commentary). Princeton University Press. ISBN 978-0691174761.
- Dijkgraaf, Robbert (2012) (in Dutch). Het nut van nutteloos onderzoek (1 ed.). Amsterdam, Netherlands: Bert Bakker Publishing. ISBN 9789035138216.
- Dijkgraaf, Robbert (2008) (in Dutch). Blikwisselingen (1 ed.). Amsterdam, Netherlands: Bert Bakker Publishing. ISBN 978-9035133365.

References

1. Overbye, Dennis (2018-11-19). "Does the Universe Still Need Einstein?" (in en-US). The New York Times. ISSN 0362-4331. <https://www.nytimes.com/2018/11/19/science/einstein-physics-universe.html>.
2. Calmthout, Door Martijn van (2007-12-11). "Dinsdagprofiel: 'troetelbèta' Robbert Dijkgraaf" (in nl-NL). <https://www.volkskrant.nl/gs-be11fb0a>.
3. Dijkgraaf, Robertus Hendricus. A geometrical approach to two-dimensional Conformal Field Theory. University of Utrecht.
4. Amsterdam, Universiteit van. "prof. dr. R.H. (Robbert) Dijkgraaf - University of Amsterdam" (in en). Archived from the original on 1 May 2015. <https://web.archive.org/web/20150501013732/http://www.uva.nl/en/about-the-uva/organisation/staff-members/content/d/i/r.h.dijkgraaf/r.h.dijkgraaf.html>.
5. "Robbert Dijkgraaf Appointed Director of Institute for Advanced Study" (in en). <https://www.ias.edu/press-releases/robbert-dijkgraaf-appointed-director-institute-advanced-study>.
6. Dijkgraaf, Robbert (1998). "The mathematics of fivebranes". Doc. Math. (Bielefeld) Extra Vol. ICM Berlin, 1998, vol. III. pp. 133–142. <https://www.elibm.org/ft/10011571000>.
7. "NWO Spinoza Prize 2003". Netherlands Organisation for Scientific Research. 4 September 2014. <http://www.nwo.nl/en/research-and-results/programmes/spinoza+prize/spinoza+laureates/overview+by+year/2003>. Retrieved 30 January 2016.
8. Robbert Dijkgraaf krijgt Erelidmaatschap NNV en KNCV op Universiteit Twente - website University of Twente <https://www.utwente.nl/nieuws/!2012/5/259936/robbert-dijkgraaf-krijgt-erelidmaatschap-nnv-en-kncv-op-universiteit-twente>
9. 'Robbert Dijkgraaf geëerd met lintje – kritiseert onderzoekspraktijk Nederland', NRC.nl 5 juni 2012, geraadpleegd op 5 juni 2012. 'Robbert Dijkgraaf geridderd', NU.nl 5 juni 2012, geraadpleegd op 5 juni 2012. <http://www.nrc.nl/nieuws/2012/06/05/robbert-dijkgraaf-geeerd-met-lintje-kritiseert-onderzoekspraktijk-nederland/>
10. List of Fellows of the American Mathematical Society, retrieved 2012-11-10. <http://www.ams.org/profession/fellows-list>
11. "Robbert Dijkgraaf Awarded Honorary Doctorate from Vrije Universiteit Brussel" (in en). <https://www.ias.edu/news/dijkgraaf-vrije-universiteit-brussel>.
12. Ruhling, Nancy A. (May 11, 2019). "Princeton, New Jersey's Borough Center is All About 'Culture and Convenience'" (in en-US). <https://www.mansionglobal.com/articles/princeton-new-jerseys-borough-center-is-all-about-culture-and-convenience-201993>.
13. "We staan op dezelfde manier in het leven, Pia en ik" (in nl). <https://www.nrc.nl/nieuws/2019/03/01/we-staan-op-dezelfde-maniër-in-het-leven-eigenzinnig-op-onszelf-a3654546>.

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