1 Curriculum Vitae:

Personal Data:

Citizenship:	United Kingdom.
Work Address:	ITP, University of Zürich, 190 Winterthurerstrasse, Zürich, Switzerland.
email:	res@physik.unizh.ch.
Tel Work:	+41 44635-5810

Professional Research History:

ITP University of Zürich	Post-doctoral Research Fellowship with Prof. U. Seljak and Prof. B. Moore	7/2007–present
University of Pennsylvania	Post-doctoral Research Fellowship with Prof. Ravi K. Sheth	5/2004–6/2007
University of Nottingham	Post-doctoral Research Fellowship with Dr Steve J. Maddox	5/2001–6/2004

Academic Training:

ROE, University of Edinburgh	PhD Cosmology with Prof. John A. Peacock	10/1997–5/2001 Official date of award 9/7/2002
Leicester University	MPhys Physics with Astro. First Class (Hons)	10/1993–5/1997

Personal Grant Awards:

- 2008 Marie Curie Reintegration Grant:
  "Baryonic Acoustic Oscillations as a Robust Probe for Dark Energy".
  Total Award: 100k Euro. To be held between 1/10/2008–30/9/2012.
- 2009 Alexander von Humboldt grant for experienced researchers.
  This grant provides funds for an experienced researcher to spend time at a university in Germany and help build collaborations between the researchers home institute and the host. In this case, the host is the Argelander Institute for Astronomy, University of Bonn.
  Total Award: 75k Euro. To be held between 1/1/2010–31/6/2012.

Super-computing Time Awards:

- 2011-2012 Leibniz-Rechnum Zentrum: Award: 1.8M CPU Hrs.
  Grant Title: *"Structure formation Beyond ΛCDM"*
  PI: **Dr R. E. Smith**, coPI: Prof Andrea Maccio (MPIA, Heidelberg).
  CoIs: Prof. B. Moore, Prof. J. Diemand, Dr. D. Reed, Dr. J. Stadel (UZurich), Prof. G. Bertone (UAmsterdam)

- 2009-2010 Texas Advanced Computing Centre (Autumn–winter): Award: 9M CPU Hrs.
  Grant Title: *"Simulating Large-Scale Structure and Cosmic Reionization: 3-D Radiative Transfer and Gravitational N -body Dynamics"*
  PI: Prof. Paul Shapiro (UTexas at Austin)
  coIs: **Dr R. E. Smith** (UZurich), Dr Ilian Iliev (USussex), Prof. Uros Seljak (UZurich), Dr Vincent Desjacques (UZurich)

- 2008-2009 Texas Advanced Computing Centre (spring–summer): Award: 9M CPU Hrs.
  Grant Title: *"Simulating Large-Scale Structure and Cosmic Reionization: 3-D Radiative Transfer and Gravitational N -body Dynamics"*
  (PI) Prof. Paul Shapiro (UTexas at Austin). (coIs) **Dr R. E. Smith**, Dr. Ilian Iliev (USussex), Prof Uros Seljak (UZurich), Dr Vincent Desjacques (UZurich)

- 2004-2005 Pittsburgh Centre for Super-computing. Award: 10K CPU Hrs
  Grant Title: *"Structure Formation in Scale-Free Universes"*.
  (PI) Ravi K. Sheth (UPenn). (coIs) **Dr R. E. Smith**, Dr Joerg Colberg (UMichigan), Prof. Robert Thacker (Queens)

Telescope Time Awards:

During my first postdoctoral research position at the University of Nottingham I was PI on a project to study the Aquarius super-cluster of galaxies. Alongside collaborators from UK, Oslo and Denmark we performed a spectroscopic and deep imaging study of this very dense cluster of clusters. I wrote all of the proposals and performed the spectroscopic observations of the super-cluster using the 2dF instrument on the AAT.

2002 PI:	AAT + 2dF.	Award: 5 nights, dark time. Semester 2002B.
2002 PI:	ESO 2.2M + WFI.	Award: 20Hrs award, priority B. Semester 71B.
2003 PI:	ESO 2.2M + WFI.	Award: 20Hrs award, priority B. Semester 72B.
2004 PI:	ESO 2.2M + WFI.	Award: 16HRs award, priority A. Semester 73B.

Supervision of PhD & Masters Students:

I have successfully supervised and co-supervised a number of PhD and masters students:

Past Students:

- Co-supervisor with Prof. G. Bernstein: Ms. L. Marian, PhD Cosmology, University of Pennsylvania. (Graduated 1/6/2008)

- Co-Supervisor with Prof. U. Seljak: Mr T. Baldauf, Masters Cosmology, University of Zürich. (Graduated 1/2/2009)

- Supervisor Mr L. Müller, Masters Cosmology, ETH Zürich. (Graduated 1/9/2010)

- Co-Supervisor with Prof. C. Porciani: Ms J. Pollack, Masters Cosmology, University of Bonn. (Graduated 31/10/2010)

Current Students:

- Co-supervisor with Prof. U. Seljak: Mr T. Baldauf, PhD Cosmology, University of Zürich: 1/4/2009
- Co-supervisor with Prof. C. Porciani: Ms J. Pollack, PhD Cosmology, University of Bonn: 1/11/2010
- Co-supervisor with Prof. B. Moore: Mr A. Schneider, PhD Cosmology, University of Zürich: 1/1/2011

Scientific leadership potential:

I. Research achievements

1. I led a flagship project for the Virgo Consortium which provided the cosmology community with a method for rapidly generating non-linear matter power spectra. This has been applied in several areas of cosmology, in particular weak lensing:
   "Stable clustering, the halo model and nonlinear cosmological power-spectra":
   R. E. Smith, J. A. Peacock, A. R. Jenkins, S. D. M. White, C. S. Frenk, F. R. Pearce, P. A. Thomas, G. Efstathiou, & H. M. P. Couchman, MNRAS, **341**, 1311 (2003).
   Citations [638+].

2. I developed the halo model of structure formation with John Peacock.
   Halo occupation numbers and galaxy bias:
   J. A. Peacock & R. E. Smith, MNRAS, **318**, 1144 (2000).
   http://de.arxiv.org/abs/astro-ph/0005010. Citations [325+]

3. I discovered that very-large-scale scale-dependent galaxy bias was an important effect to account for in galaxy redshift surveys and developed an analytic framework for understanding these effects:
   "Scale dependence of halo and galaxy bias: Effects in real space":
   R. E. Smith, R. Scoccimarro, R. Sheth, PRD, **75**, 063512. (2007). Citations [100+].

4. I discovered that the BAO test for cosmological geometry and for dark energy, required a correction for small shifts in the BAO oscillation structure.
   "On the motion of the acoustic peak in the correlation function"
   R. E. Smith, R. Scoccimarro, & R. K. Sheth, PRD, **77**, 043525 (2008). Citations [66+]

5. My collaborators and I were one of the first groups to perform tests of general relativity on cosmological scales:
   "Test of gravity at cosmological scales using weak gravitational lensing and velocity flows"
   R. Reyes, R. Mandelbaum, U. Seljak, T. Baldauf, J. E. Gunn, L. Lombriser, R. E. Smith, Nature, **464**, 256 (2010). Citations [50+]

6. EUCLID: is a proposed ESA mission to map the dark universe.
   I am a member of the cosmological simulations and the weak lensing working groups.

II. Recognition of achievements by the community

1. I have authored and coauthored 27 publications, of which 24 are published in peer reviewed journals, while the remaining 3 articles are currently in review.

2. Of these 27 publications, I am the first author on 12 of them.

3. As of 3/10/11, these works together have acquired a total of 1644+ ADS citations and my normalized citation score is 390+.

4. I have 4 publications with more than 100 citations, two of which I am lead author on and one where I am second author.

5. I have 6 publications with more than 50 citations, three of which I am lead author on and one where I am the second author.

Recent Invited Colloquia and Talks at International Conferences:

(9/2011) Institute of Theoretical Physics CEA, Saclay, France:
"PTChat: Hardcore techniques in cosmological perturbation theory"
(4/2011) Argelander Institute for Astronomy, University of Bonn, Germany
(3/2011) ICTP, Trieste, Italy
(12/2010) University of Geneva, Switzerland: "Euclid Workshop"
(11/2010) IFA. University of Edinburgh, Scotland: "Workshop on computational cosmology"
(7/2010) Benasque Meeting on Modern Cosmology, Spain: "Modern Cosmology"
(6/2009) Recontres de Blois 20th Anniversary, Blois, France: " Windows on the Universe"
(4/2009) ICE, Barcelona, Spain
(4/2009) MPA, Garching, Germany

Lecturing Experience:

- 2010-2011, UZurich, spring semester: *Introduction to Astrophysics*: 6 Lectures.
  Course convener: Dr R. E. Smith. Level: Year 1-2 undergraduates.

- 2010-2011, UZurich, spring semester: *Theoretical electrodynamics*: 1 Lecture.
  Course convener: Prof. Uros Seljak. Level: Year 2 undergraduates.

- 2009-2010, UZurich, spring semester: *Theoretical Cosmology*: 2 Lectures.
  Course convener: Prof. Uros Seljak. Level: Year 3-4 undergraduates.

- 2008-2009, UZurich, spring semester: *Theoretical Cosmology*: 4 Lectures.
  Course convener: Prof. Uros Seljak. Level: Year 3-4 undergraduates.

- 2006-2007, UPenn, spring semester: *Introduction to cosmology*: 1 Lecture.
  Course convener: Prof. Ravi Sheth. Level: Year 1 undergraduates.

- 2006-2007, UPenn, winter semester: *Modern cosmology*: 2 Lectures.
  Course convener: Prof. Bhuvnesh Jain. Level: Masters

- 2005-2006, UPenn, winter semester: *Modern cosmology*: 2 Lectures.
  Course convener: Prof. Bhuvnesh Jain. Level: Masters

Teaching Experience:

- 2009-2010 UZurich, winter semester proseminar. Convener Prof. Uros Seljak.
  I supervised two students in their semester long study of topics in theoretical cosmology.
  Mr Enzo Scossa-Romano (ETH) *"Principles of weak gravitational lensing"*
  Mr Lorenzo De Vittori (ETH) *"Linear theory perturbations and the growth of structure"*
  I was also responsible for organizing the final end of semester presentations.

- 2007-2008 UZurich. I organized a weekly theoretical cosmology discussion session. The aim was to bring together academic researchers in the new cosmology group at the university and researchers from the neighboring ETH astrophysics institute.

- 2004-2007 University of Pennsylvania. I organized a research seminar series for graduate students and fellow postdocs. The program consisted of studying in detail theoretical aspects of selected topics in cosmology, over a period of several weeks.

- 2001-2003 University of Nottingham. I served as academic tutor for five physics undergraduate students, through two academic years. Responsibilities included: providing advice on course options and the curriculum; helping them understand difficult aspects of their physics lectures.

Professional Services:

I am a regular referee for the following peer reviewed journals:

"Physical Review Letters"
"Physical Review D"
"The Astrophysical Journal"
"Monthly Notices of the Royal Astronomical Society"
"Journal Cosmology and Astroparticle Physics"

Academic References:

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