

CURRICULUM VITAE ET STUDIORUM

Gabriella De Lucia

Contact Information:

INAF-Osservatorio Astronomico,
via G.B. Tiepolo 11,
34143, Trieste
tel: +39-040-3199-128, fax: +39-040-309418
E-mail address: gabriella.delucia@inaf.it

EDUCATION:

- 2004** *Doctor Rerum Naturalium* (Ph.D.), Ludwig-Maximilian Universität, München
Thesis title: *Evolution of galaxies in clusters*
Advisors: Prof. S. D. M. White, Dr. G. Kauffmann
- 2000** *Laurea in Fisica*, University “Federico II”, Naples; final grade: 110/110 *cum laude*
Thesis title: *Modelli evolutivi di galassie ellittiche a basso redshift*
Advisors: Prof. M. Capaccioli, Dr. M. Arnaboldi
- 1994** *Diploma di maturità scientifica*; final grade: 60/60

CURRENT AND PREVIOUS POSITIONS:

- 2016 to date** Senior Researcher (‘Primo Ricercatore’ - equivalent to Associate Professor) at INAF - Astronomical Observatory of Trieste
- 2013-2016** Researcher (permanent position) at INAF - Astronomical Observatory of Trieste
- 2009 to 2014** Senior Researcher (‘Primo Ricercatore’ - 5-year fixed term position funded by ERC Starting Grant) at INAF - Astronomical Observatory of Trieste
- 2004-2009** Long term PostDoctoral Fellowship at the Max-Planck-Institut für Astrophysik (MPA), Garching bei München, Germany.
- 2001-2004** Graduate student at MPA in the framework of the first *International Max-Planck Research School* (IMPRS).
- 2000** Research contract for tests on the software for reduction of data from the Wide Field Imager 2.2m telescope, and analysis of data from the *Capodimonte Deep Field*. Astronomical Observatory of Capodimonte, Naples, Italy, August 1st - December 15th.

HONORS AND AWARDS:

- 2017** Bessel Research Award (awarded by the von Humboldt Foundation).
- 2013** MERAC Prize for the Best Early Career Researcher in Theoretical Astrophysics (awarded by the European Astronomical Society).
- 2012** Italian national University Habilitation (Associate Professor).
- 2012** Nominated by the European Research Council as member of *AcademiaNet* (a database of the best women researchers in Europe).
- 2011** Order of Merit (Officer) of the Italian Republic awarded by the President of the Italian Republic for “...brilliant activity as young researcher in the field of astrophysics...”.
- 2008** European Research Council (ERC) *Starting Independent Researcher Grant* (less than 300 proposals funded out of more than 9000 submitted across all research fields).
- 2007** Zwicky Prize Fellowship (declined).
- 2007** NOVA Fellowship (declined).
- 2005** Honourable mention from the Italian Astronomical Society for the best PhD thesis in 2004 (*Premio Tacchini*).
- 2005** Completion of the *International Max-Planck Research School in Astrophysics* with *distinction*.

- 2001** PhD fellowship (three years) from the *International Max-Planck Research School in Astrophysics*.
1999 Grant from the *Istituto Italiano per gli Studi Filosofici* for attending the school *For a critical balance of the Physics in the XX century*, Naples, Italy.

Main Grants:

- 2020** co-I of the project *New Light on the Intergalactic Medium*, funded by INAF, national PI: S. Cristiani - 102 kEUR
- 2018** co-I of the project *FORmation and Evolution of Cosmic STructures with Future Radio Surveys*, funded by INAF, national PI: I. Prandoni - 320 kEUR
- 2016** **Node coordinator and co-chair of Exchange Supervisory Team** of the *Latin American Chinese European Galaxy Formation Network*, funded by EU (RISE project), project PI: C. Baugh 1,350kEUR
- 2015** co-I of the project *Glittering Kaleidoscopes in the sky, the multifaceted nature and role of galaxy clusters*, funded by INAF, national PI: M. Nonino - 190 kEUR
- 2014** **PI** of the project *Galaxy formation and evolution with the Square Kilometre Array*, funded by INAF through a PhD studentship - 56 kEUR
- 2014** **PI** of the project *Towards the next generation of galaxy formation models*, funded by the foundation MERAC - 146 kEUR
- 2012** co-I of the project *The Universe in a box: multi-scale simulations of cosmic structures*, funded by INAF, national PI: G. Murante - 96 kEUR
- 2012** co-I of the project *Evolution of cosmic baryons: astrophysical effects and growth of cosmic structures* funded by Miur (Ministry of Education, Universities and Research), national PI: S. Borgani - 266 kEUR
- 2011** **PI** of the Trieste Research Unit for the project *From the dawn of galaxy formation to the peak of the mass assembly* funded by INAF, national PI: G. Zamorani - 170 kEURO
- 2009** co-I of the project *VIPERS: The large-scale structure and growth rate of the Universe at $z \sim 1$ from a survey of 100,000 galaxy redshifts* funded by INAF, national PI: G. Guzzo - 245 kEURO
- 2008** **PI** of the project *Galaxies through the cosmic ages: the role of primordial conditions and environmental effects*, funded by the *European Research Council* - 750 kEURO

SUPERVISION OF PDH STUDENTS AND POSTDOCTORAL FELLOWS:

- since 2021** Daria Zakharova (PhD, co-supervisor with B. Vulcani), University of Padova
- 2018-2021** Marta Spinelli (PostDoc), INAF-OATs, now postdoc at ETH Zurich
- 2018-2020** Rachele Cecchi (PhD, co-supervisor with F. Fontanot), University of Trieste, now in industry (PhD suspended, on request of the student, in February 2020)
- 2018** Anna Zoldan (PostDoc), INAF-OATs, now in private sector
- 2017-2021** Serafina Di Gioia (PhD, co-supervisor with S. Cristiani), University of Trieste, now at SISSA
- 2014-2018** Lizhi Xie (PostDoc), INAF-OATs, funded by MERAC, tenured in China
- 2014-2017** Anna Zoldan (PhD), University of Trieste
- 2013-2016** Fabio Fontanot (PostDoc, co-supervisor S. Cristiani), INAF-OATs, now permanent
- 2012-2014** Umberto Maio (PostDoc), INAF-OATs, now permanent
- 2011-2014** Michaela Hirschmann (PostDoc), INAF-OATs, funded by ERC, now permanent
- 2010-2014** Emanuele Contini (PhD), University of Trieste, funded by ERC, now PostDoc in Korea
- 2010-2012** Olga Cucciati (PostDoc), INAF-OATs, now permanent
- 2009-2013** Alvaro Villalobos (PostDoc), INAF-OATs, funded by ERC, now in industry
- 2007-2009** Alex Saro (PhD, co-supervisor) University of Trieste, now holding ERC Starting Grant
- 2006-2009** Tutor and co-tutor of numerous projects by PhD students at MPA

TEACHING ACTIVITIES:

- 2021** PhD lectures *An introduction to semi-analytic models*, for students involved in the EU Network BID4BEST, held remotely
- 2021** PhD lectures *Modeling galaxy evolution*, Scuola Normale Superiore, Pisa, Italy
- since 2019 (once per year)** PhD lectures *Formation and Evolution of Galaxies in a hierarchical Universe*, University of Trieste, Italy
- 2014** Lectures on *Galaxy formation and evolution* for PhD students, Eighth TRR33 Winter School - December 7-12, Passo del Tonale, Italy
- 2013** Lectures on *Cosmology* for undergraduate students, at the University of Trieste
- 2012** Lectures on *Galaxy formation and evolution* for PhD students, *Graduate Days in Heidelberg* - October 8-12, Heidelberg, Germany
- 2009-2010** PhD lectures *Formation and Evolution of Galaxies in a hierarchical Universe*, SISSA, Trieste.
- 2008** PhD lectures on *Theoretical scenarios of galaxy formation*, National PhD School in Astrophysics - September 21-27, Asiago, Italy.
- 2006** Lectures on *semi-analytic models*, MAGPOP Summer School, August 23-25, Budapest, Hungary.
- 2005** Workshop on semi-analytic methods, October 13, Garching bei München, Germany.

COLLOQUIA AND INVITED PRESENTATIONS AT CONFERENCES:

Since 2005:

- 32 invited talks or reviews, and 2 summary talks at international conferences;
- 2 plenary talks (at the EWASS 2013 as winner of the MERAC prize, and at the annual meeting of the German Astronomical Society in 2011);
- 33 invited seminars and colloquia in research institutes around the world.

Professional activities:

Panels/boards:

- ERC Consolidator Grant panel member (2019 and 2021)
- Panel member of the Time Allocation Committee for the telescopes TNG/LBT/REM (2014-2016)
- Member of the teachers board of the PhD School in Physics at the University of Trieste since 2013
- Panel member of the ESO Observing Programmes Committee (Periods 91 and 92)
- Panel member for the Cycle 18 proposals (invited again for Cycles 21, 22, and 25 but could not serve)

Expert Reviewer:

- HST proposals submitted for Cycle 25 and Cycle 27
- Leverhulme Trust Senior Research Fellowship (2018)
- Physics Discovery Grants for the Natural Sciences Research Council of Canada (2016)
- ERC (1 Advanced and 5 Starting proposals since 2013)
- French Research Agency (2011 and 2012)
- United States-Israel Binational Science Foundation (2011)
- National Fund for Scientific and Technological Development of Chilean Government (2010 and 2021)
- Netherlands Organisation for Scientific Research (2010)
- Anne McLaren Fellowship scheme 2009/10
- Peter and Patricia Gruber Foundation Fellowship (2009)
- FWF Austrian Science Fund (2005 and 2019)

External PhD examiner:

- University of Western Australia (2021)
- SISSA (2018)
- University of Durham (2015)

Conference/workshop organization:

Since 2005, I have served on the Scientific organizing Committees of 20 International Conferences, and I have been in charge of the organization of several collaboration meetings (VIPERS, CLASH-VLT, Galaxy Formation at Trieste). In addition, I have chaired or co-chaired the following events:

- 2019 Co-chair of the SOC and LOC for the international workshop *The journey of galaxies in the assembling cosmic structure*, held in Trieste, Italy
- 2018 Co-chair of the SOC for the *European Week of Astronomy and Space Science*, Liverpool, UK
- 2017 Coordinator (with other 4) of the international workshop *In&Out. What rules the Galaxy Baryon Cycle?*, held at MIAPP in Garching bei Muenchen, Germany
- 2013 Coordinator (with A. Muzzin and S. Weinmann) of the international workshop on *What regulates galaxy evolution?*, held in Leiden
- 2012 Co-chair (with O. Cucciati) of the organization of the international conference *The physics of Star Formation and its role in Galaxy Evolution*, held in Trieste
- 2009 Chair of the organization of the international *Workshop on Galaxy Formation*, held in Sesto Val Pusteria, Italy
- 2005 Co-chair of the organization of the international conference *From Simulations to Surveys*, held at the Ringberg Castle, Germany

Regular peer reviewer for A&A, ApJ, ApJ Letters, MNRAS, MNRAS Letters

Other:

- Invited contribution to the book *Galaxies Across one Century of Research: Dialogues on the Evolution of Our Understanding*, to be published by Springer
- Invited author of the book chapter *Galaxies in the Cosmological Context*, published in the series *Planets, Stars and Stellar Systems* (<http://www.springer.com/astronomy/book/978-90-481-8817-8?otherVersion=978-90-481-8818-5>)
- Co-I of several successful observational proposals at major telescopes
- Co-I of several successful computational grants
- Visiting Scientist to several research Institutes in Europe, USA and Japan. Two (invited) extended visits to the Kavli Institute for Theoretical Physics (KITP) at UC Santa Barbara

Gabriella De Lucia – Publications – last update March 2022:

188 refereed publications in major peer reviewed journals (21 as first author, and 47 as second [most of these] or third author with relevant contribution to the project design and analysis). More than 16,800 citations; 36 papers (8 of which as first author) with more than 100 citations; 5 papers (2 of which as first author) with more than 500 citations (h-index: 61).

The ten most important publications among those with relevant contribution, in the last 15 years, are:

1. *The atomic hydrogen content of the post-reionization Universe*, Marta Spinelli, Anna Zoldan, **Gabriella De Lucia**, Lizhi Xie, Matteo Viel, 2020, MNRAS, 493, 5434
2. *H₂-based star formation laws in hierarchical models of galaxy formation*, Lizhi Xie, **Gabriella De Lucia**, Michaela Hirschmann, Fabio Fontanot, Anna Zoldan, Anna, 2017, MNRAS, 469, 968
3. *Galaxy assembly, stellar feedback and metal enrichment: the view from the GAEA model*, Michaela Hirschmann, **Gabriella De Lucia**, Fabio Fontanot, 2016, MNRAS, 461, 1760
4. *Elemental abundances in Milky Way-like galaxies from a hierarchical galaxy formation model*, **Gabriella De Lucia**, Luca Tornatore, Carlos S. Frenk, Amina Helmi, Julio F. Navarro, Simon D.M. White, 2014, MNRAS, 445, 970
5. *On the formation and physical properties of the intracluster light in hierarchical galaxy formation models*, E. Contini, **G. De Lucia**, A Villalobos, S. Borgani, 2014, MNRAS, 437, 3787
6. *The environmental history of group and cluster galaxies in a Λ CDM Universe*, **G. De Lucia**, S. Weinmann, B. Poggianti, A. Aragon-Salamanca, D. Zaritsky, 2012, MNRAS, 423, 1277
7. *The many manifestations of downsizing: hierarchical galaxy formation models confront observations*, Fabio Fontanot, **Gabriella De Lucia**, Pierluigi Monaco, Rachel S. Somerville, Paola Santini, 2009, MNRAS, 397, 1776
8. *The Galaxy and its stellar halo: insights on their formation from a hybrid cosmological approach*, **Gabriella De Lucia** and Amina Helmi, 2008, MNRAS, 391, 14
9. *The build-up of the colour-magnitude relation in galaxy clusters since $z \sim 0.8$* , **Gabriella De Lucia**, Bianca Poggianti, Alfonso Aragón-Salamanca, Simon White, Dennis Zaritsky, Douglas Clowe, Claire Halliday, Pascale Jablonka, Anja von der Linden, Bo Milvang-Jensen, Roser Pelló, Gregory Rudnick, Roberto Saglia, Luc Simard, 2007, MNRAS, 374, 809
10. *The hierarchical formation of the brightest cluster galaxies*, **Gabriella De Lucia** and Jérémy Blaizot, 2007, MNRAS, 375, 2