

# SABRINA SABATINI

## Curriculum Vitae

### Part I – General Information

Full Name	Sabrina Sabatini
Date of Birth	24/04/1968
Place of Birth	Orbetello (GR)
Citizenship	Italian
E-mail	Sabrina.sabatini@uniroma1.it
Spoken Languages	Italian, English, German

### Part II – Education

- **1993:** Degree in Biological Science *cum laude*, University of Roma “La Sapienza”
- **1998:** PhD in Genetic and Molecular Biology, University of Roma “La Sapienza”
- **1999:** Post-graduate studies in Genetic and Molecular Biology of Plant Development

### Part III – Appointments

- **1998-2003:** Post Doctoral Fellow, University of Utrecht, Department of Genetics and Cell Biology, The Netherlands
- **2003-2008:** Independent group leader at: Department of Biology and Biotechnology “Charles Darwin”, University of Roma “La Sapienza”.
- **2008-2012:** research position BIO/11 at Department of Biology and Biotechnology “Charles Darwin”, University of Roma “La Sapienza”.
- **2012-present:** Associate Professor BIO/11 at: Department of Biology and Biotechnology “Charles Darwin”, University of Roma “La Sapienza”.

### Part IV – Teaching experience

- **2007-2018:** Course owner in BIOLOGIA MOLECOLARE DELLO SVILUPPO NELLE PIANTE / CELL DIFFERENTIATION AND DEVELOPMENT (6 CFU), Corso di Laurea Magistrale in Genetica e Biologia Molecolare (LM-6), corso opzionale.

- **2016-2018:** Course owner in BIOLOGIA DELLE CELLULE STAMINALI E APPLICAZIONI (3 CFU), Corso di Laurea Magistrale in Biotecnologie (LM-6), corso opzionale.
- **2015-2018:** Course owner in BIOLOGIA MOLECOLARE DEL MIGLIORAMENTO E CONTROLLO DELLA PRODUZIONE DEL CIBO (6CFU), Corso di Laurea Magistrale (LM-70), fondamentale.
- **2016- present:** Course owner in MOLECULAR BIOLOGY II (6 CFU), Corso di Laurea triennale in in Bioinformatic (L-2), fondamentale, in english.
- **20017-present:** Course owner in BIOLOGIA MOLECOLARE (9CFU), Corso di laurea triennale in Biologia (L-13), fondamentale
- **2005-present:** Member of the commission of the Phd in Genetica e Biologia Molecolare of the University "La Sapienza".
- **2021:** Member of the commission for the assignment of scholarships for specialization activities abroad for CUN Area 5.

To date, S.S. has been the tutor of 10 PhD students in Genetica e Biologia Molecolare, 2 PhD students in Life Sciences, 8 post-doc and numerous students of various bachelor's and master's degrees.

#### *International teaching experince*

- **2016:** lesson/seminars for the pHd school in PLANT DEVELOPMENTAL BIOLOGY , Retzbach, Germany ( 9 hours).
- **2016:** lesson/seminars for the pHd school in MOLECULAR BIOLOGY OF PLANT DEVELOPMENT, Ghent University, Belgium (12 hours).
- **2018:** Invited to organize and deliver a course in ADVANCE TOPICS IN PLANT GENETICS at the University of San Paulo (USP), Brazil (30 hours)

#### **Part V - Society memberberships, Awards and Honors**

- **Since 2012** member of **AccademiaNet** (<http://www.academia-net.org/selection-criteria/>) *Outstanding women academics and scientists are nominated for the portal by our partners; it is not possible to apply directly. Our scientific partner organisations have appointed high-ranking persons to the steering committee, which then agreed on a set of standards for all of the partners to use when nominating candidates for AccademiaNet.*
- **Since 2014** member of the European Molecular Biology Organization (**EMBO**).
- **In 2015** selected among the 100 most influential women for the economic and social development of Italy. <https://100esperte.it/search?id=140>
- **In 2016** appointed by the Max Planck Society as a possible candidate for the vacant Director

position of the Max Planck Institute for Plant Breeding Research of Cologne, Germany

- **Since 2020** member of the Società Italiana di Biofisica e Biologia Molecolare (**SIBBM**)

## **Part VI - Funding Information [grants as PI-principal investigator or I-investigator]**

### *List of Grants as PI*

- **2003 – 2006**: “Rientro dei Cervelli”, MIUR, D.M. 13 of 26.1.2001, for a total of 90.000 €. Title of the project: *Ruolo dell'ormone auxina e citochininina durante lo sviluppo del meristema radicale di Arabidopsis*.
- **2003 – 2008**: Career Development Award of the Giovanni Armenise-Harvard Foundation, for a total of 750 .000 US \$. Title of the project: *Role of the hormone Cytokinin during Arabidopsis root development*.
- **2009 – 2012**: Grant Istituto Pasteur- Fondazione Cenci Bolognetti, for a total of 60.000 €. Title of the project: *To the root of organ growth: the control of root meristem activity in Arabidopsis*.
- **2010 – 2015**: Consolidator Grant, European Research Council (**ERC**) LS3 panel, for a total of 1.500.000 €. Title of the project: *To The Root Of Organ Growth: The Control Of Root Meristem Activity In Arabidopsis*. Project acronym: ROMA. Grant agreement no.: 260368
- **2013 – 2016**: Grant Istituto Pasteur- Fondazione Cenci Bolognetti, for a total of 60.000 €. Title of the project: *Size matters: the molecular mechanisms maintaining meristem size during root growth*.
- **2018**: Progetto di Ateneo Grande for a total of: 35.000€.  
Title of the project: *Molecular mechanisms in developmental boundary formation*
- **2020 – 2022**: CDA Mid-Career GRANT PROGRAM of the Giovanni Armenise-Harvard Foundation, for a total of 200.000 US \$. Title of the project: *Developmental Boundaries: choosing between division and differentiation*.

### *List of Grants as I*

- **2006 – 2009**: PRIN, title of the project: *Effetto materno e ruolo dei fattori di trascrizione DAG nella germinazione del seme di Arabidopsis*.
- **2010 - 2013**: PRIN, title of the project: *L'interazione citochinina/auxina nel controllo dell'architettura dell'apparato radicale in Arabidopsis: un approccio genetico-molecolare*.

- **2013 – 2016:** PRIN, title of the project: *Il controllo della crescita delle radici: un approccio di systems biology.*

## Part VII – Research Activities

Keywords	Brief Description
Root meristem	<p>The research of S.S. is focused on the root meristem of Arabidopsis as a model system and aims to elucidate the fundamental processes that regulate the division and differentiation of stem cells.</p> <p><b>-1990 -1993:</b> Performs the experimental thesis work for the degree in Biological Sciences in the laboratory of Dr. Roberta Quarta, at the Institute for Fruit Growing in Rome (CRA). The work is aimed at building a genomic map of the peach tree using RFLP and RAPID markers.</p> <p><b>-1993-1998:</b> After graduation, S.S. moved to the laboratory of Prof. Paolo Costantino, Dept. Genetics and Molecular Biology, Sapienza University of Rome, for the PhD in Genetics and Molecular Biology. Participate in the identification of a new family of transcription factors of the plant kingdom, the DOF genes, (Plant Journal, 1996). S.S. then deals with the role of the DOF DAG1 gene in the control of seed germination (Genes &amp; Development, 2000; Plant Physiology, 2002). During this period she spent two months in the laboratory of Prof. Thomas Berleth, University of Munich (DE), taking advantage of an EMBO short-term scholarship.</p> <p><b>-1998-2003:</b> After the Doctorate, S.S. moved as a postdoc to the laboratory of Prof. Ben Scheres, University of Utrecht (NL), where she deals with the molecular mechanisms by which the hormone auxin controls the activity of the root meristem of Arabidopsis. These studies reveal the crucial role of auxin in regulating fundamental processes such as division, polarity and fate of a cell (Cell, 1999). Later, with an EMBO long-term bag, S.S. deals with the characterization of the transcription factor SCARECROW, and demonstrates that it is involved in the maintenance of stem cells of the root meristem of Arabidopsis (Genes &amp; Development, 2003).</p> <p><b>Since 2003:</b> S.S. returns to the Department of Biology and Biotechnology “Charles Darwin”, Sapienza University of Rome, thanks to a three-year contract under the D.M. 13 of 26.1.2001 ("Incentives for the mobility of Italian and foreign teachers working abroad") and the assignment of the prestigious Career Development Award by the Giovanni Armenise-Harvard Foundation of Harvard University (USA), for the first time assigned to a Plant Biology project. Thanks to these funds, she carries out independent research activities, setting up from scratch a high-tech laboratory for the study of Arabidopsis stem cell.</p>
Stem cell	
Cell division	
Cell differentiation	
Plant hormones	

### ***Research communication and promotion activities***

- S.S. frequently participates as "invited speaker", "Plenary speaker" and "Keynote speaker" in national and international conferences and is often invited to hold seminars in prestigious national and international research institutions (see below). In addition, in these years she has often been invited to disseminate her research on television (Rai3, Rai scuola, Rai communication), on the radio (radio Radicale) and in various national newspapers including "La Repubblica" and "Il Corriere della Sera". Furthermore she acts as:
  - Senior Editor of *Cell Reports*  
<http://www.cell.com/cell-reports/editorial-board>
  - Advisory Editor of *Plant and Cell Physiology*  
[https://academic.oup.com/pcp/pages/Editorial\\_Board](https://academic.oup.com/pcp/pages/Editorial_Board)
  - *Ad hoc* reviewer for *Science, Nature, Cell, Current Biology, Gens and Dev., PNAS, The EMBO J., Cell report, Development, Plos One, Plant Cell, Plant Journal, etc...*

### ***Seminars and congress participation as invited speaker in the last 5 years***

- International Plant Molecular Biology Congress , Iguazú Falls, Brazil 25-30 October 2015  
**Keynote speaker and organizer** of the Parallel Session: Root development: "Hormonal control of root development"
- November 2015 John Innes Center, Norwich, UK, seminar: "An auxin minimum triggers the developmental switch from cell division to cell differentiation in the Arabidopsis root"
- April 2016 Technical University of Munich, Germany, seminar: "An auxin minimum triggers the developmental switch from cell division to cell differentiation in the Arabidopsis root"
- 27th International Conference on Arabidopsis Research (ICAR), Gyeong Ju June 29- July 3, 2016, Korea, **Plenary speaker and organizer** of the Parallel Session: Hormones: Auxin and Cytokinin "An auxin minimum triggers the developmental switch from cell division to cell differentiation in the Arabidopsis root"
- September 2016 , Max Plank Institute Colonia, Germany, seminar: " How to establish a developmental boundary"
- Latest Advances in Plant Development & Environmental Response, Awaji, November 29 – December 2, 2016 Japan, oral communication: " How to establish a developmental Boundary"

- 16 February 2017, The Copenhagen Plant Science Centre (CPSC) at the University of Copenhagen, Denmark, seminar: “How to establish a developmental Boundary”<sup>[1]</sup> dal 16-02-2017 al 16-02-2017
- International Society of Root Research Conference – ISRR 2018, Jerusalem, Israel, 8-12 July 2018, oral communication: “The dynamic of root growth”
- 28th International Conference on Arabidopsis Research (ICAR), Turku, Finland, 25-29 June  
**Plenary speaker:** “The dynamic of root growth”
- Plant Organ Grow Symposium 2019, Bordeaux, France, 24-26 April, oral communication: “The dynamic of root growth”
- Genetic Congress 2020, Teheran, Iran, 30 September-2 October, online oral communication: “The dynamic of root growth”
- FESPB & EPSO Plant Biology Europe 2021, Turin, Italy, 28 June- 1 July, **Keynote speaker:** Developmental boundaries: choosing between division and differentiation.
- SEB 2021 annual meeting, 29 June - 8 July, **Organizer** of the session: “Cellular aspects of plant hormone action”.

#### Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	40	Scopus	1996	2021
Books chapter [scientific]	1	Scopus	2013	2013

Total Impact factor	376.63
Average Impact factor	9.2
Total Citations	4601
Average Citations per Product	112
Hirsch (H) index	24
Normalized H index*	0,96

\*H index divided by the academic seniority.

## Part IX– Selected Publications

\* Publication as corresponding author

Reviews were written following an invitation from the journal

1. Sabatini S., Beis D., Wolkenfelt H., Murfett J., Guilfoyle T., Malamy J., Benfey P., Leyser O., Bechtold N., Weisbeek, P. and Scheres, B. An Auxin-dependent distal organizer of pattern and polarity in the Arabidopsis root. *Cell* 99, 463-472, 1999. **IF 41.84**; Citations: **977**  
*This work had an immediate and very strong impact on (plant) developmental biology, and has been included in several university textbooks used also at “La Sapienza” such as “Developmental Biology”, Sinauer Associates press, and “Principles of Development”, Oxford University press. The results of this work were also publicized in several newspapers in the Netherlands.*
2. \* Dello Ioio R., Scaglia Linhares F., Scacchi E., Casamitjana-Martinez E., Heidra R., Costantino P. and Sabatini S. Cytokinins determine *Arabidopsis* root-meristem size by controlling cell differentiation. *Current Biology* 17, 678-682, 2007. **IF 9.5** Citations: **510**  
*This manuscript has been referred to as the best work of the month in Current Biology, and has been selected by the journal Cell in the section “Cell’s Leading Edge” of May 2007.*
3. \* Dello Ioio R., Nakamura K., Moubayidin L., Perilli S., Taniguchi M., Morita M.T., Aoyama T., Costantino P. and Sabatini S. A genetic framework for the control of cell division and differentiation in the root meristem. *Science* 322, 1380-84, 2008 **IF 41.06** Citations: **569**  
*Press release on this article: La Repubblica 27 November 2008 “La crescita delle piante non ha più segreti”, <http://www.repubblica.it/2008/11/sezioni/ambiente/piante/piante/piante.html> Il Corriere della Sera 29 November, pag 15 “Ormoni in Tandem: ecco le Super Pianta”*
4. \* Moubayidin L, Di Mambro R, Sabatini S. Cytokinin-auxin crosstalk. *Trends in Plant Science* 14, 557-62, 2009. **IF 12.3** Citations: **224**
5. \* Perilli S, Moubayidin L. and Sabatini S. The molecular basis of cytokinin function, *Current Opinion in Plant Biology* 13, 21-26, 2010. **IF 8.48** Citations: **146**
6. \* Moubayidin, L., Perilli, S., Dello Ioio, R., Di Mambro, R., Costantino, P. and Sabatini, S. The rate of cell differentiation controls the *Arabidopsis* root meristem growth phase. *Current Biology*, 20, 1138–1143, 2010. **IF 9.5** Citations: **230**  
*A Dispatch on this article appeared on Current Biology, 20, 2010*
7. Dello Ioio R, Galinha C, Fletcher AG, Grigg SP, Molnar A, Willemsen V, Scheres B, Sabatini S, Baulcombe D, Maini PK, Tsiantis M. A PHABULOSA/cytokinin feedback loop controls root growth in Arabidopsis. *Current Biology* 22, 1699-704, 2012. **IF 9.5**; Citation **72**
8. \* Moubayidin L, Di Mambro R, Sozzani R, Pacifici E, Salvi E, Terpstra I, Bao D, van Dijken A, Dello Ioio R, Perilli S, Ljung K, Benfey PN, Heidstra R, Costantino P, Sabatini S. Spatial coordination between stem cell activity and cell differentiation in the root meristem. *Developmental Cell*. 26, 405 - 15, 2013. **IF 10.1** Citations: **82**

9. \* Perilli S, Perez-Perez JM, Di Mambro R, Peris CL, Díaz-Triviño S, Del Bianco M, Pierdonati E, Moubayidin L, Cruz-Ramírez A, Costantino P, Scheres B, Sabatini S. RETINOBLASTOMA-RELATED protein stimulates cell differentiation in the Arabidopsis root meristem by interacting with cytokinin signaling. *Plant Cell* 25, 4469-78, 2013. **IF 9.6** Citations: **27**
10. \* Heidstra R, Sabatini S. Plant and animal stem cells: similar yet different. *Nature Reviews Molecular Cell Biology* 15, 301-12, 2014. **IF 37.8**; Citations: **113**
11. \* Pacifici E, Polverari L, Sabatini S. Plant hormone cross-talk: the pivot of root growth. *Journal of Experimental Botany* 66, 1113-21, 2015. **IF 7.01** Citations: **105**
12. \* Moubayidin L, Salvi E, Giustini L, Terpstra I, Heidstra R, Costantino P, Sabatini S. A SCARECROW-based regulatory circuit controls *Arabidopsis thaliana* meristem size from the root endodermis. *Planta*. 243, 1159-68, 2016. **IF 3.2** Citations: **15**
13. \* Di Mambro R., de Ruvo M., Pacifici E., Salvi E., Sozzani R., Benfey P., Bush W., Ljung K., Di Paola L, Maree L., Grieneisen V., Costantino P., Sabatini S. An auxin minimum triggers the developmental switch from cell division to cell differentiation in the Arabidopsis root. *Proc Natl Acad Sci U S A*. 2017;114:E7641-E7649 **IF 10.6** Citations: **90**
14. \* Pacifici E, Di Mambro R, Dello Ioio R, Costantino P, Sabatini S. Acidic cell elongation drives cell differentiation in the Arabidopsis root. *EMBO J*. 2018 15;37(16). pii: e99134. doi: 10.15252/embj.201899134. **IF 10.4** Citations: **34**
15. \* Di Mambro R, Svolacchia N, Dello Ioio R, Pierdonati E, Salvi E, Pedrazzini E, Vitale A, Perilli S, Sozzani R, Benfey PN, Busch W, Costantino P, Sabatini S. The Lateral Root Cap Acts as an Auxin Sink that Controls Meristem Size. *Curr Biol*. 2019;29(7):1199-1205.e4. doi: 10.1016/j.cub.2019.02.022. **IF 9.2** Citations: **18**
16. \* Salvi E., Rutten J., Di Mambro R, Polverari L., Licursi V., Negri R., Dello Ioio R., Ten Tusscher K., Sabatini S. A self-organized PLT/AUXIN/ARR-B network controls the dynamics of root zonation development in *Arabidopsis thaliana*. *Develop. Cell* 2020, 53 (4): 431-443. doi.org/10.1016/j.devcel.2020.04.004 **IF 10.1** Citations: **7**

*Press release on this article: La Repubblica, Scienza e Ricerca, 7 November 2019, "Quella pianta digitale ha la radice quadrata"*

*Press release on this article: La Repubblica, 21 May 2020 "Un nuovo modello matematico prevede il comportamento della pianta"*

*[https://www.repubblica.it/scienze/2020/05/21/news/un\\_nuovo\\_modello\\_matematico\\_prevede\\_il\\_comportamento\\_della\\_pianta-257262839/?ref=search](https://www.repubblica.it/scienze/2020/05/21/news/un_nuovo_modello_matematico_prevede_il_comportamento_della_pianta-257262839/?ref=search)*

*A Dispatch on this article appeared on Developmental Cell, 53, 372-374 "Root Development: A Go-Faster Stripe and Spoilers"*