BIOGRAPHICAL SKETCH

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Education:

1987-1991: B.S. University of Agricultural Sciences, Bangalore, India.
1991-1994: M.S. (Crop Physiology), University of Agricultural Sciences, Bangalore, India.
1994-1999: Ph.D. (Molecular Biology), Tata Institute of Fundamental Research, TIFR, Mumbai, India (Advisor: Prof. Veronica Rodrigues).

Professional Experience:

June 1999-June 2005: Jane Coffin Childs memorial fund Post-doctoral fellow, Division of Biology, California Institute of Technology, Pasadena, CA. (Mentor: Prof. Elliot M. Meyerowitz).
July 2005-present: Senior research fellow, Division of Biology, California Institute of Technology, Pasadena, CA

Publications (*Arabidopsis* - Stem-cells: genetics, transient genetics and live imaging):

a. **Reddy, G. V.** and Meyerowitz, E. M. (2005). Stem-cell homeostasis and growth dynamics can be uncoupled in the Arabidopsis shoot apex. *Science* **310**, 663-667.
b. **Reddy, G. V.**, Heisler, M. G., Ehrhardt, D. W. and Meyerowitz, E. M. (2004). Real-time lineage analysis reveals oriented cell divisions associated with morphogenesis at the shoot apex of Arabidopsis thaliana. *Development* **131**, 4225-4237.
c. Heisler, M. G., Ohno, C., Das, P., Sieber, P., Long, J. A., **Reddy, G. V.** and Meyerowitz, E. M. (2005). Auxin transport dynamics and gene expression patterns during primordium development in the Arabidopsis Inflorescence Meristem. *Current Biology* (In press).
d. Ohno, C. K., **Reddy, G. V.**, Heisler, M. G. and Meyerowitz, E. M. (2004). The Arabidopsis JAGGED gene encodes a zinc finger protein that promotes leaf tissue development. *Development* **131**, 1111-1122.
e. Gallois, J., Woodward, C., **Reddy, G. V.** and Sablowski, R. (2002). Combined SHOOT MERISTEMLESS and WUSCHEL trigger ectopic organogenesis in *Arabidopsis*. *Development* **129**, 3207-3217.

Publications (*Arabidopsis* - Computational modeling):

a. Jönsson, H, Heisler, M.,† **Reddy, G. V.,**† Agrawal, V., Gor, V., Shapiro, B. E., Mjolsness, E., and Meyerowitz, E. M. (2005). Modeling the organization of the WUSCHEL expression domain in the shoot apical meristem. *Bioinformatics* 21(S1): i232-i240.

† These authors contributed equally to this work.

b. Gor, V., Shapiro, B. E., Jönsson, H., Heisler, M., **Reddy, G. V.**, Meyerowitz, E. M., and Mjolsness, E. (2005). A Software Architecture for Developmental Modeling in Plants: The Computable Plant Project. Bioinformatics of Genome Regulation and Structure, 2nd Biennial Edition. N. Kolchanov, Kluwer (In press)

Other Significant Publications (*Drosophila* Genetics and cell fate specification):

a. Sen, A., **Reddy, G. V**. and Rodrigues, V. (2003). Combinatorial expression of Prospero, Seven-up and Elav, identify progenitor cell types during sense-organ differentiation in the *Drosophila* antenna. *Dev. Biol.* **254**, 79-92.

b. Jhaveri, D., Sen, A., **Reddy, G. V.** and Rodrigues, V. (2000). Sense organ identity in the*Drosophila* antenna is specified by the expression of the proneural gene atonal. *Mech. Dev.* **99**, 101-111.

c. **Reddy, G. V**., and Rodrigues, V. (1999). A glial cell arises from an additional division within the mechanosensory lineage during development of the microchaete on the *Drosophila* notum. *Development* **126**, 4617-4622.

d. **Reddy, G. V.,** and Rodrigues, V. (1999). Sibling cell fate in the *Drosophila* adult external sense organ lineage is specified by prospero function, which is regulated by Numb and Notch. *Development* **126**, 2083-2092.

e. **Reddy, G. V**., Reiter, C., Shanbhag, S., Fischbach, K. F., Rodrigues, V. (1999). Irregular chiasm-C-roughest, a member of the immunoglobulin superfamily, affects sense organ spacing on the *Drosophila* antenna by influencing the positioning of founder cells on the disc ectoderm. *Dev Genes Evol.* **209**, 581-91.

f. **Reddy, G. V.,** Gupta, B. P., Ray, K. and Rodrigues, V. (1997). Development of the *Drosophila* olfactory sense organs utilizes cell-cell interactions as well as lineage. *Development* **124**, 703-712.

Fellowships:

1. **Fellow of the Jane Coffin Childs memorial fund for medical research** (June 1999-June 2002). Competitive grant awarded to carry out post-doctoral research with Prof. Elliot M. Meyerowitz
2. **Development travel Fellowship from the Company of Biologists Ltd. UK** (1996). Fellowship awarded to work with Prof. Pat Simpson at IGBMC, Strasbourg, France
3. **Indian Council of Agricultural Research (ICAR)** junior fellowship: A two year competitive grant awarded to carry out research during M.Sc. (Ag) (1991-1993)
4. **National University grant commission (UGC) Fellowship** (1993) for Junior research fellows. Competitive grant awarded by Council of Scientific and Industrial Research, Govt. of India to carry out research during Ph.D. program for a three years term.

Honors and Awards:

Awarded University gold medal for securing I rank in M.Sc. (Ag). (1994).

Teaching experience:

Teaching assistance:

1. Developmental Genetics (1997), course taught by Prof. Rodrigues, V.
2. Crop physiology (1993), course taught by Prof. Udayakumar, M.

Mentoring experience:

Served as a co-mentor for Caltech sponsored summer undergraduate research fellowship (SURF) projects carried out by various people at different times mentioned below.

1. **June-August 2004:** Ms. Emma Thomas (Project title: Transient gene silencing and cell ablation in the shoot apical meristems of *Arabidopsis thaliana*)
2. **June-August 2003:** Mr. Paul H. Nagami (Project title: The Greening of *Arabidopsis*:Visualizing the *Arabidopsis* apical meristem with GFP and confocal microscopy)
3. **June-August 2001:** Mr. Stephan Wenkel (Project title: Mapping of *jagged*, a mutation affecting organ size). Currently he is a Ph.D. student working with Prof. George Coupland, Max-Plank-Institute, Cologne, Germany.

4. **June-August 2000:** Ms. Hanna Kim (Project title: Genetic screens to identify modifiers of *clavata1*)

Synergistic Activities:

1. Platform presentations at meetings by **Reddy, G. V.**

a. Regulation of the stem cell niche in the *Arabidopsis* shoot apex: A real-time analysis (2005). Invited talk. **Society of Developmental Biology (SDB) 64th annual meeting** held at Hyatt Regency, San Francisco, CA (July 26th 2005 - July 31st 2005).

b. CLAVATA3 mediates a long-range inhibition of cell division activity in the shoot apical meristems of *Arabidopsis thaliana*. MERISTEMS 2005. **7th annual plant sciences institute symposium** held at Iowa state university, Ames, Iowa (June 2nd 2005 - June 5th 2005).

c. Cell division patterns, cell fates and meristem maintenance: A real-time analysis. **FASEB Summer research conference** on "Mechanisms of plant development", Saxton's river, Vermont (August 7th - August 11th , 2004).

d. Analyzing cell division patterns in shoot apical meristems of *Arabidopsis thaliana*: A live imaging approach. **The 22nd plant biology symposium** held at Univ. of California, Riverside, CA (January 15th 2003 - January 19th 2003).

2. Poster presentations at meetings:

a. **Reddy, G. V.**, Heisler, M., G. and Meyerowitz, E. M. (2003).Intra-vital imaging reveals spatial and temporal dynamics of cell behavior in the shoot apical meristems of *Arabidopsis thaliana*. 14th International conference on Arabidopsis research, Wisconsin, Madison.

b. Jonsson, H., Heisler, M. G., **Reddy, G. V.**, Meyerowitz, E. M.,and Mjolsness,(2003). Inferring Gene Regulatory Network Models for Plant Stem Cell Regulation. International conference on systems Biology, Washington Univ., St. Louis.

c. **Reddy, G.V.** and Meyerowitz, E.M. (2000). Cell-cell interactions and regulation of cell division in floral meristems of *Arabidopsis thaliana*. Jane Coffin Childs fund fellows meeting, Lakeville, CT.

3. Courses attended:

a) **Neurobiology** (1996). Marine Biological Laboratories (MBL), Woods Hole, MA. A laboratory course organized in three sections covering physiology, molecular biology and imaging aspects in various neuronal tissues.

b) **Principles of modern microscopy** (2001). California Institute of Technology, Pasadena, CA. A laboratory course on principles and practices of modern microscopy and vital imaging methods taught by Prof. Scott E. Fraser

List of Collaborators (*Arabidopsis* related):

Marcus Heisler, Division of Biology, California Institute of Technology, Pasadena, CA.
Robert Sablowski, John Innes Centre, Norwich NR4 7UH, UK.
Bruce E. Shapiro, Jet Propulsion Laboratory, California Institute of Technology
Henrik Jönsson, Complex Systems Division, Lund University, Lund, Sweden

Referees:

1. Elliot M. Meyerowitz (Post-doctoral mentor)
   George W. Beadle Professor of Biology and
   Chair, Division of Biology
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2. Kathy Barton (A leader in plant stem-cell field, closely followed my work)
   Professor and staff member
   Department of Plant Biology
   Carnegie Institution of Washington and Department of Biological Sciences
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3. Veronica Rodrigues (Ph. D. thesis advisor)
   Professor and Chair,
   Department of Biological Sciences
   Tata Institute of Fundamental Research (TIFR)
   Homi Bhabha Road, Colaba
   Mumbai 400 005, India
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   Fax : 091-22-2152181
   E-mail : veronica@tifr.res.in
   http://www.tifr.res.in/~dbs/faculty/vrlab/vrlab.html

4. Ben Scheres (A leader in plant stem-cell Biology, closely followed my work)
   Professor, Molecular Genetics
   Department of Molecular Cell Biology, University of Utrecht
   Padualaan 8
   3584 CH, Utrecht , Netherlands
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   Fax: 31-030-513655

5. Scott E. Fraser (A leader in biological imaging, closely followed my work while it is being developed)
   Anna L. Rosen Professor of Biology
   Director, Magnetic Resonance Imaging Center
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