Table of Contents:

Section I: Emerging Technologies and Systems Biology

- 1. Untangling the Gordian knot: Cell signaling events that instruct development
- 2. RNA-seq and deep sequencing
- 3. Using mutagenesis in mice and zebrafish for developmental gene discovery
- 4. Chemical approaches to control stem cell fate
- 5. BMP signaling and stem cell self-renewal in the Drosophila ovary
- 6. Genomic Analyses of Neural Stem Cells
- 7. Chordate origins, stem cells and regeneration

Section II: Early Embryology and Morphogenesis

- 8. Dorsal-ventral axis patterning in insects
- 9. Building dimorphic forms: an examination of the genetic pathways that intersect embryonic patterning and sex determination
- 10. Anterior-Posterior patterning in mammals
- 11. Early development of epidermis and neural tissue
- 12. Taking the middle road: mesoderm induction and the blastula-gastrula transition
- 13. Endoderm induction
- 14. Epithelial branching: mechanisms of patterning and self-organization
- 15. Lateral line migration

Section III: Organogenesis

- 16. Neural cell fate determination
- 17. Retinal development
- 18. Neural crest determination
- 19. Determination of preplacodal ectoderm and sensory placodes
- 20. Olfactory development
- 21. Inner ear development
- 22. Molecular genetics of tooth development
- 23. Induction of the cardiac lineages
- 24. Blood vessel formation
- 25. Blood induction and embryonic formation
- 26. Vertebrate kidney formation: a comparative perspective
- 27. Development of the genital system
- 28. Skeletal development
- 29. Formation of vertebrate limbs
- 30. Patterning the embryonic endoderm into presumptive organ domains
- 31. Pancreas Development and Regeneration

Section IV: Selected Clinical Problems

- 32. Diaphragmatic embryogenesis and human congenital diaphragmatic defects
- 33. Genetic and developmental basis of congenital cardiovascular malformations
- 34. Multiple Roles of T-box genes
- 35. Craniofacial syndromes: etiology, impact and treatment
- 36. DeGeorge and related syndromes
- 37. Neural tube defects