

# JUDY MARTIN

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## EDUCATION

- **Bachelor of Science Cell Biology, minor in Music** June 2006  
*University of California, Davis* Davis, CA
  - Independent honors research project: Studied the effects of retinoic acid on live chicken embryos. Advisor Dr. Ben Edwards. (Spring 2005)
  - Phi Sigma Biological Honor Society, Member: Society devoted to the promotion of research in the Biological Sciences.
  - Davis Honors Challenge: Four year honors program centered on collaborative research, problem-solving, and presentation, culminating in yearlong junior and senior projects. (2002-2006)
  - Study Abroad: University of Sussex, Brighton, England. (Summer 2004)
  - Presenter at the UC Davis Undergraduate Research Conference. (2006)

## WORK HISTORY & RESEARCH EXPERIENCE

- **Scholey Lab of Cell and Computational Biology, Principal Investigator Dr. Jonathan Scholey**
  - Undergraduate Volunteer Researcher* December 2005 - June 2006  
*University of California, Davis*
    - Project Experience:
      - Summary: Investigated role of motor protein cortical forces in *Drosophila* embryo mitosis using mutant lines, microinjection, and spinning disc confocal fluorescence microscopy.
  - Post Graduate Researcher* October 2006 - September 2007  
*University of California, Davis*
    - Project Experience:
      - Summary: Investigated molecular mechanisms of mitosis with a focus on anaphase B spindle elongation in *Drosophila* embryo.
      - Designed and evaluated efficacy of synthetic antisense oligos for in vivo gene knockdown in live *Drosophila* mitotic embryos.
      - Developed novel protocol using correlative light and electron microscopy, and high pressure freezing, on the early *Drosophila* embryo to determine mitotic spindle ultrastructure. Collaborative work with Dr. Kent McDonald, UC Berkeley.
      - Used computer graphics software to create 3-dimensional reconstruction images of microtubule trajectories in the mitotic spindle.
      - Performed protein expression, immunoprecipitation, and antibody generation for use in in vivo protein inhibition experiments.
      - Fixed and stained *Drosophila* embryos for immunofluorescence microscopy.

## WORK HISTORY & RESEARCH EXPERIENCE CONTINUED

- **McNally Lab of Molecular and Cellular Biology,  
Principal Investigator Dr. Francis McNally**

*Post Graduate Researcher*

September 2007 to May 2009

*University of California, Davis*

- Project Experience:

- Summary: Investigated molecular mechanisms of meiotic asymmetric spindle positioning in *C. elegans* embryo.
- Examined localization and mechanism of motor proteins and cytoskeletal components during meiotic spindle translocation in *C. elegans* embryos.
- Developed new optimized protocol for fixation, immuno-staining, and imaging of meiotic embryos.
- Utilized dissection, epifluorescence, spinning disk confocal, laser scanning confocal and deconvolution microscopes for data collection.
- Performed microparticle bombardment and analysis for creation of transgenic *C. elegans* lines.
- Performed antibody purification and characterization for use in fixed cell staining.
- Developed novel microtome-sectioning, fixation and immuno-staining protocol.
- Concurrently acted as lab manager: organized lab, oversaw purchasing, coordinated safety training, and hired and trained new members.

- **American Society for Cell Biology, Member**  
*National meeting attendee 2006 and 2008.*

2006 to 2009

## PUBLICATIONS & PRESENTATIONS

- Co-first author publication: McNally, K. L., **J. L. Martin**, M. Ellefson, and F. J. McNally. 2010. Kinesin-Dependent transport results in polarized migration of the nucleus in oocytes and inward movement of yolk granules in meiotic embryos. *Dev. Biol.* 339(1): 126–140.
- Poster Presenter: National Meeting for the American Society for Cell Biology, Poster Session, Kinesin Session: Poster 2609. The KCA-1 Protein Mediates Kinesin 1-dependent Movement of Multiple Cargos During Meiosis in *C. elegans*. **J. Martin**, K. McNally, F. McNally; Molecular and Cellular Biology, University of California, Davis. 2008
- Presented research at UC Davis internal, multi-lab Cytoskeleton group meeting, one hour presentation. (December 2008)
- Presented research at UC Davis internal, multi-lab Wormgroup meeting, one hour presentation. (April 2008)

## LABORATORY SKILLS

- Proficiency in molecular laboratory techniques including DNA plasmid purification, RNAi gene knockdown, protein expression, purification, dialysis, and concentration.
- Proficiency in molecular analytical techniques including SDS-PAGE, Western Blots, Southern Blots, and Bradford assays.
- Assisted in maintenance of microscopy equipment and model organism stocks of *Drosophila* and *C. elegans*.
- Experience with Matlab, MetaMorph, KaleidaGraph, Microsoft Office, Adobe Illustrator, ImageJ, iVision, Bitplane AG: Imaris XT, and Huygens Deconvolution software programs.