

Christina B Hansen
252 Manor Drive
Richboro, Pa 18954
CHansen@Princeton.edu

Experience

August 2011- Present

Senior Research Specialist and Lab Manager

Department of Ecology and Evolutionary Biology
Princeton University

Primary duties are to:

- ◆ Develop and optimize novel ELISAs for detection of autoantibodies, virus-specific antibodies and other biomarkers in multiple mammalian species
- ◆ Develop and optimize qPCR reactions to quantify immune gene expression
- ◆ Conduct parasitological and histopathological examination of host tissues
- ◆ Routinely perform immunoassays in both mammalian and insect systems
- ◆ Conduct field research monitoring and sampling local wild peromyscus populations
- ◆ Curate field sample collections and maintain stocks
- ◆ Support undergraduate and graduate student thesis projects
- ◆ Set-up, optimize, maintain, repair equipment and workspaces
- ◆ Illumina paired end sequencing *Plasmodium chabaudi chabaudi*
- ◆ Malaria culture murine system
- ◆ *T. muris* & rodent malaria life cycle maintenance

Lewis-Sigler Institute Teaching lab

May 2006-Jan 2012

Senior Research Specialist and Lab Manager

Lewis Sigler Institute
Princeton University

- ◆ Supported courses with reagent preparation, ordering, administrative work, equipment repair, and general organization for annual courses including Mol350, Mol 500, QCB301-Mol301 and summer 2006 MicroArray special course
- ◆ Analyzed DNA and RNA samples using microarrays. Carried out RNA/DNA isolation, labeling, database entry, and basic analysis, using both in-house spotted arrays and Agilent arrays. Trained and monitored over 60 students in array analysis
- ◆ Gained experience in research methods for the model organisms *S. cerevisiae*, *C. elegans*, and *E. coli*, as well as mammalian tissue culture for RNAi experiments
- ◆ Prepared reagents and media, including extensive use of automated plate pourer
- ◆ Produced chemically competent and electrocompetent cell stocks
- ◆ Assisted students with independent projects
 - a. Wrote protocols tailored specifically for student use including but not limited to the below training video for yeast tetrad dissection, which has been used by the CSHL Yeast Genetics course and many other individuals. This video is featured on Wikipedia (http://en.wikipedia.org/wiki/Tetrad_%28genetics%29 : see the external links to the “Tetrad Dissection Training Video” or google YouTube for “Tetrad Dissection”
 - i. Part one: <http://www.youtube.com/watch?v=YHe3IE8fJn8>

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ii. Part two:

<http://www.youtube.com/watch?v=Ify8VtSnT5s&feature=related>

- b. Assisted students in troubleshooting laboratory work, including PCR, gel electrophoresis, yeast genetics, and microscope use

**Monoclonal Core Facility Manager, and
Flow Cytometry Core Facility Assistant**

November 2004-May 06

Department of Molecular Biology
Princeton University

- ◆ Was solely responsible for scheduling and performing all monoclonal antibody production required by members of Princeton University
- ◆ Archived and preserved unique cell stocks for members of Princeton University
- ◆ Maintained equipment, stocks, and supplies in Monoclonal Facility, Media Preparation Facility, and Flow Cytometry Facility
- ◆ Was a member of MetroFlo, a cytometry society, 2005-2007
- ◆ Was a member of ISAC, a cytometry society, 2006-2007

Research Assistant and Lab Manager

June 2000 – November 04

Laboratories of Kateri Moore and Ihor Lemischka
Department of Molecular Biology
Princeton University

- ◆ Was responsible for day to day maintenance of labs, over-saw tissue-culture work
- ◆ Conducted hematopoietic murine primitive cell research, utilizing in vitro functional assays. Assays include long-term culture assays to determine self-renewal potential, colony forming unit assay to determine primitiveness of cell population. Antibody staining techniques for cytometry and microscopy
- ◆ Performed murine bone marrow and fetal liver niche analyses, utilizing standard techniques and protocols
- ◆ Maintained mouse colonies relevant to experiments, including timed pregnancies
- ◆ Was a member of Molecular Biology Department Stockroom Committee 2003-2005

Education

University of Med. and Dentistry of NJ, MS program classes 2001-02

Delaware Valley College, Doylestown, PA. Bachelor of Science, Biology 1998

Additional Skills

- ◆ Northern Blot, Southern Blot and Western Blot
- ◆ Conjugation of proteins to other molecules
- ◆ Affinity purification of IgG

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- ◆ Purification and analysis of proteins using chromatographic separations, ELISA, HPLC, SDS-PAGE
- ◆ Real Time qPCR, PCR
- ◆ Ion exchange chromatography and size exclusion chromatography
- ◆ Fusion Protein assembly and contig identification
- ◆ Using PCR fragments and ligation techniques for monoclonal antibody production
- ◆ In vitro culture of plants cells, tissues
- ◆ Induction of somatic embryogenesis and protoplast fusion of select plant varieties
- ◆ Clinical analysis of human blood products for disease via PCR
- ◆ Antibody production, purification, concentration and titer for use in lineage depletion and murine stem cell sorting
- ◆ Measurement of pathogen-specific antibodies as indices of disease exposure
- ◆ Fluorescent-activated Cell Sorting (FACS) analysis used to analyze bone marrow, fetal liver and other cell types; independently able to set up and run four-color FACS
- ◆ Maintenance of cell lines, including growth, expansion, transfection, infection, freezing, thawing, cryogenic tank maintenance and record keeping of stock cell lines
- ◆ Mouse embryo manipulation and isolation of embryonic cells from hormone stimulated females
- ◆ Production, concentration and titer of viral particles (lentiviruses and retroviruses)
- ◆ Murine stem cell sorting and long term culture maintenance from whole bone marrow and mouse fetal liver

Publications

Caudy, A.A., Guan, Y., Jia, Y., **Hansen, C.**, Desevo, C., Hayes, A.P., Agee, J., Alvarez-Dominguez, J.R., Arellano, H., Barrett, D., · [...] · Wolf, A., Young, C., Yuan, J., Crutchfield, C., McClean, M.N., Murphy, C.T., Llinás, M., Botstein, D., Troyanskaya, O.G., Dunham, M.J. (2013) *Genetics*, 195, 275-287

Fairlie-Clark, K.J., **Hansen, C.**, Allen, J.E., and Graham, A. (2015) Increased exposure to *Plasmodium chabaudi* antigens sustains cross-reactivity and avidity of antibodies binding *Nippostrongylus brasiliensis*: dissecting cross-phylum cross-reactivity in a rodent model. *Parasitology*, 142, 1703-1714