

# KIRA YOUNG

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## INTERDISCIPLINARY SCIENTIST/ENGINEER

Scientist/chemical engineer with multidisciplinary research and development background. Expertise in molecular biology and analytical chemistry techniques, data collection and analysis. Able to work both independently and as part of a team. Willing to master new techniques as needed.

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## EDUCATION

**PhD, Functional Genomics**, University of Maine, Orono, ME

Graduation Date: May 2014

***Dissertation:*** *A proteomics approach to the study of endoglin function and hereditary hemorrhagic telangiectasia*

**BS, Chemical Engineering, summa cum laude**, University of Maine, Orono, ME, 2003

**GPA: 3.74/4.00**

**George Mitchell Peace Scholar**, University College Cork, Cork, Ireland, Sept-Dec 2001

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## RESEARCH EXPERIENCE

*Jackson Laboratory, Bar Harbor, ME*

2014 – present

### Postdoctoral Trainee

#### **Research Highlights:**

- Conducting research to identify the underlying mechanisms driving MDS-to-sAML progression and order of mutational acquisition in the development of AML
- Techniques include reduced representation bisulfite sequencing to assay genome-wide DNA methylation, mapping of double strand breaks using the BLESS method and open chromatin region identification using transposase-accessible chromatin sequencing.

*Maine Medical Center Research Institute, Scarborough, ME*

2006 – 2014

Graduate School of Biomedical Sciences

### Ph.D. Candidate, Functional Genomics

A full time research graduate student seeking a Ph.D degree in functional genomics focused on understanding molecular signaling during angiogenesis using *in vitro* systems and *in vivo* mouse models.

#### **Research Highlights:**

- Conceptualized and designed proteomics/mass spectrometry-based projects aimed at identifying novel gene targets of TGF- $\beta$  signaling and their effect on angiogenesis and determined specific functions for endoglin involved in the pathology of arterialvenous malformations in the vascular dysplasia, hereditary hemorrhagic telangiectasia (HHT).
- Required methods included analysis of *in vitro* cell culture of primary human cells, viral transduction methods (retro-, lenti- and adenovirus), cell imaging using confocal microscopy, immunohistochemistry of mouse embryos and perfused adult mouse lungs, maintenance and breeding of multiple mouse strains, PCR, western blot and mass spectrometry to determine novel gene targets.
- Mentored undergraduate and graduate level individuals seeking research experience. Responsible for the oversight and success of their projects.

*University of Maine, Orono, ME*

2004 – 2006

Department of Chemical and Biological Engineering

### Research Assistant

- Designed experiments involving the interaction of casein kinase-2 (CK2) with bone morphogenetic proteins (BMPs) in immortalized cells using FRET analysis and confocal microscopy.
- Assisted in laboratory start-up for Dr. Anja Nohe including ordering and maintenance of supplies and compliance with laboratory safety regulations.
- Molecular biology techniques: confocal microscopy, western blots, cloning techniques, FRET analysis, reporter gene assays.

University of Maine, Orono, ME  
Department of Chemical and Biological Engineering and Department of Chemistry

2001 and 2006

### Teaching Assistant

- Assisted in teaching and preparation of molecular biology methods laboratory course (2006).
- Responsible for teaching and providing assistance to students in a general chemistry lab of eighteen students (2001).

University of Western, London, Ontario

May - Sept 2003

### Research Assistant

- Assisted in *in vitro* research involving the interaction of epidermal growth factor (EGF) with BMPs.
- Molecular biology techniques: quantum dots with live cell imaging, confocal microscopy and image correlation spectroscopy, western blots, immunoprecipitation.

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## SCHOLARSHIPS/AWARDS

2012	1 <sup>st</sup> Place, Graduate Student Poster Award, NAVBO, Genetics and Genomics of Vascular Disease
2012	Student travel award, NAVBO, Genetics and Genomics of Vascular Disease
2006-2009	NSF-IGERT Functional Genomics Trainee
2001	George Mitchell Peace Scholarship
1998-2003	Pulp and Paper Scholarship
1998-2003	Top Scholar Award

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## ABSTRACTS

**Young K.**, Tweedie E., Conley B., Vary C.P. Quantitative proteomics identifies correlation of *in vitro* and *in vivo* analysis of protein identification in response to endoglin expression.

**Young K.**, Krebs L., Tweedie E., Conley B., Gridley T., Vary C.P. Conditional inactivation of endoglin in Pax3 expressing cells leads to intersomitic vessel defects.

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## PUBLICATIONS

**Young, K.**, Conley B., Tweedie E., Brooks P.C., Vary C.P. (2012) Endoglin signaling regulates angiogenesis via the Hippo pathway. (Plos One, manuscript under revision for publication)

**Young, K.**, Conley, B., Romero D., Tweedie E., O'Neill C., Pinz I., Brogan L., Lindner V., Liaw L., Vary C.P. (2012) BMP9 regulates endoglin-dependent chemokine responses in endothelial cells. *Blood*. 120(20):4263-73.

Romero D., O'Neill C., Terzic A., Contois L., **Young K.**, Conley BA., Bergan RC., Brooks P.C., Vary C.P. (2011) Endoglin regulates cancer-stromal cell interactions in prostate tumors. *Cancer Res.* 71(10):3482-93.

Bragdon B., Thinakaran S., Moseychuk O., King D., **Young K.**, Litchfield DW., Petersen N.O., Nohe A. (2010) Casein kinase 2 beta-subunit is a regulator of bone morphogenetic protein 2 signaling. *Biophys J.* 99(3):897-904.

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## REFERENCES

### **Calvin Vary, PhD**

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