

# Nik Kovinich

West Virginia University  
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Current Appointment      Assistant Professor of Genetics, Division of Plant and Soil Sciences  
Davis College of Agriculture, Natural Resources and Design, WVU  
2015 July – Present

Education                      Ph.D. Biology  
Carleton University / Agriculture and Agri-Food Canada  
2007 September – 2011 September

B.Sc. Honors Biology (Biotechnology)  
University of Ottawa  
2003 September - 2007 April

Diploma - Horticulture and Greenhouse Management  
Kemptville College  
2001 September – 2003 April

Postdoctoral Training      The Ohio State University, Department of Molecular Genetics  
2011 October – 2015 June

Academic Appointments      Postdoctoral Fellow  
The Ohio State University, Department of Molecular Genetics  
2011 October – 2015 June

Research Affiliate  
Agriculture and Agri-Food Canada (Supervisor: Brian Miki)  
2010 April - 2011 September

Plant Biology Research Assistant  
Agriculture and Agri-Food Canada (Supervisor: Harvey Voldeng)  
May – September, 2003-2007

Teaching                      **Courses**  
Principles in Genetics (Lecture and Lab) – GEN 371  
Honors Investigation and Thesis – BIOL 486  
Independent Research – BIOL 386  
Teaching Practicum – GEN 790  
Research – GEN 497

**Research Mentor**  
West Virginia University  
2015 July – Present

Students:

[Md. Asraful Jahan](#) (PhD student)

[Kelli Farrell](#) (Undergraduate - Biology)

[Paige Durkin](#) (Undergraduate – Biology)

[Holland Matlock](#) (Undergraduate – Biochemistry)

[Paige Palumbo](#) (Undergraduate – Biology)

The Ohio State University  
2012 February – 2015 May

Students:

[Janet A. Adegboye](#) (Undergraduate, Presently at CWRU Med School)

[Gilbert Kayanja](#) (Pre-Graduate Student, Presently at Purdue)

[Daniela Carolina Pinto Elicio](#) (PhD Student)

[Yiqun Wang](#) (Undergraduate, Presently at Harvard University)

[Donald Thomas](#) (Undergraduate, Presently at OSU Medical School)

[Anna Zakas](#) (Undergraduate, Presently at BioReliance)

**Guest Lecturer**

University of Ottawa, ON, CA

2009 November

Course: BIO4144 Plant Biochemistry and Molecular Biology

Lecture Topic: Metabolic engineering

**Teaching Assistant**

Carleton University

2008 September – 2011 September

Courses:

Practical Biochemistry (BIOC 3006)

General Biochemistry II (BIOC 3102)

General Biochemistry I (BIOC 3101)

Plant Biochemistry and Physiology (BIOL 3305)

Cell Physiology and Biochemistry (BIOC 2200)

Introductory Genetics (BIOL 2104)

**Awards**

Nominated for Outstanding Undergraduate Research Mentor  
Undergraduate Research Office and URO's Student Advisory Committee,  
The Ohio State University

2014 February (Declined Award - Not Faculty)

Visiting Fellowships in Canadian Government Laboratories NSERC

Postdoctoral Fellowship

2013 June (Declined Award - Pelotonia did not Permit Simultaneously Holding  
two Fellowships)

Postdoctoral Pelotonia Fellowship

2012 November – 2014 November

Ontario Graduate Scholarship

2011 September, Declined

Dean Grad. Stud. Acad. Excellence

2010 September - 2011 August

International Association for Plant Biotechnology – Canadian Scholarship

December 2009

Dean Grad. Stud. Acad. Excellence

2009 September - 2010 August

Phytochemical Society of North America – Best Presentation  
August 2009

Carleton University Graduate Scholarship  
2008 September - 2008 December

University of Ottawa – Dean's Honor  
2006-2007

Memberships in  
Professional  
Societies

2011- American Society of Plant Biologists  
2009- International Association for Plant Biotechnology  
2009- Phytochemical Society of North America  
2009-2011 Canadian Society of Plant Physiologists

Peer Reviewed  
Publications

- Chanoca A, Burkel B, **Kovinich N**, Grotewold E, Eliceiri K, Otegui M (In Press). Using Fluorescence Lifetime Microscopy to Study Subcellular Localization. *Plant Journal* TPJ-00510-2016.
- Chanoca A, **Kovinich N**, Grotewold E, Otegui M. (2015). [Anthocyanin Vacuolar Inclusions Form by a Microautophagy Mechanism](#). *The Plant Cell*. DOI: tpc.15.00589. (Cover article for *The Plant Cell*, and highlighted in *Nature*)
- Kovinich N**, Kayanja G, Chanoca A, Otegui M, Grotewold E (2015). [Abiotic stresses induce different localizations of anthocyanins in Arabidopsis](#). *Plant Signaling & Behavior* DOI 10.1080/15592324.2015.1027850.
- Kovinich N**, Kayanja G, Chanoca A, Riedl K, Otegui M, Grotewold E (2014). [Not all anthocyanins are born equal: Distinct patterns induced by stress in Arabidopsis](#). *Planta* DOI 10.1007/s00425-014-2079-1.
- Kovinich N**, Saleem A, Arnason JT, and Miki B. (2012a). [Coloring genetically modified soybean grains with anthocyanins by suppression of the proanthocyanidin genes ANR1 and ANR2](#). *Transgenic research* DOI: 10.1007/s11248-011-9566-y.
- Kovinich N**, Saleem A, Arnason JT, Miki B. (2012b). [Identification of two anthocyanidin reductase genes and three red-brown soybean accessions with reduced anthocyanidin reductase 1 mRNA, activity, and seed coat proanthocyanidin amounts](#). *Journal of agricultural and food chemistry* 60: 574-84.
- Schnell S, Labbé H, **Kovinich N**, Manabe Y, Miki B. (2012c). [Comparability of imazapyr-resistant Arabidopsis created by transgenesis and mutagenesis](#). *Transgenic research* DOI: 10.1007/s11248-012-9597-z.
- Kovinich N**, Saleem A, Arnason JT, Miki B (2011a) [Combined analysis of](#)

[transcriptome and metabolite data reveals extensive differences between black and brown nearly-isogenic soybean \(\*Glycine max\*\) seed coats enabling the identification of pigment isogenes](#). BMC Genomics 12: 381.

**Kovinich N**, Arnason JT, DeLuca V, Miki B (2011b) [Coloring Soybeans with Anthocyanins?](#) In DR Gang, ed, Recent Advances in Phytochemistry, Vol 41. Springer, pp 47-57. ISBN: 978-1-4419-6961-3.

**Kovinich N**, Saleem A, Arnason JT, Miki B (2010) [Functional characterization of a UDP-glucose:flavonoid 3-O-glucosyltransferase from the seed coat of black soybean \(\*Glycine max\* \(L.\) Merr.\)](#). Phytochemistry 71: 1253-1263

Manuscripts in Preparation

**Kovinich N**, Wang Y, Chanoca A, Adegboye A, Otegui M, Grotewold E. MATE45 mediates the intertissue distribution of abscisic acid to coordinate growth and the abiotic stress response

Invited Presentations

**Kovinich N**, Grotewold E (2015) Metabolite Transporters as Central Mediators of Stress Responses. Department of Horticulture and Crop Sciences, The Ohio State University, Wooster, OH, USA

**Kovinich N**, Grotewold E (2015) Understanding Metabolic Responses to Stress for Crop Improvement. The Division of Plant & Soil Sciences, University of West Virginia, Morgantown, WV, USA

**Kovinich N**, Grotewold E (2013) New Frontiers in the Chemical Arsenal Against Cancer: Combining Modules of Semi-Synthesis and Synthetic Biology. Professor John Arnason Seminar, University of Ottawa, ON, Canada

**Kovinich N**, Grotewold E (2013) New Frontiers in the Chemical Arsenal Against Cancer: Combining Modules of Semi-Synthesis and Synthetic Biology. Pelotonia Fellowship Symposium, OH, USA

**Kovinich N**, Wang Y, Vascik A, Bohorquez-Restrepo A, Chanoca A, Otegui M, Grotewold E (2012) A genome-wide screen identifies a membrane-bound transporter required for the accumulation of a subset of anthocyanins in Arabidopsis. Banff Conference on Plant Metabolism, AB, Canada

**Kovinich N**, Miki B (2011) Metabolic Engineering of Seed Coat Color. Professor Doug Johnson's BIO4144 Course, University of Ottawa, ON, Canada

**Kovinich N**, Saleem A, Arnason JT, Miki B (2010) Coloring soybeans with anthocyanins for food safety- Functional identification of a flavonoid 3-O-glucosyltransferase gene from soybean seed coat. 12th World Congress of the International Association for Plant Biotechnology, MS, USA

Scientific Activities

*Reviewer*

2016- Plant Cell Reports

2015- Journal of Proteome Research

2015- Plant Physiology and Biochemistry

2014, 2015- PLOS ONE

2014, 2012, 2011- Plant Science

2013- Arabian Journal of Chemistry

2013- International Journal 4 Molecular Sciences

2013- Protoplasma  
2012- Planta  
2011- BMC Plant Biology

*Judge*

2014- Denman Forum (An Undergraduate Science Fair)  
2011- Annual Akwesasne Mohawk Science Fair  
(An Elementary School Science Fair)

Other  
Appointments

Advisor - CAPS Plant Growth Facilities Committee  
Center for Applied Sciences (CAPS) / The Ohio State University  
2013 - 2015