

Thomas P. Brutnell
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Professional Preparation:

University of Connecticut	Biology	B.S., <i>magna cum laude</i> 1989
Yale University	Biology	Ph.D. 1995
University of Oxford, UK	Plant Sciences	1995-1999

Appointments:

Associate Scientist	Boyce Thompson Institute	Jan.2006 – present
Adjunct Professor	Cornell University	2000 - present
Assistant Scientist	Boyce Thompson Institute	Dec.1999 – 2005
Junior Research Fellow	University of Oxford	1997 -1999
Postdoctoral Associate	University of Oxford	1995 -1997
NIH Research Assistantship	Yale University	1993 -1995
University Honors Scholar	University of Connecticut	1989
Phi Beta Kappa awarded	University of Connecticut	1989

Related Publications:

- Schnable et al. (2009) The B73 maize genome: complexity, diversity and dynamics. *Science* (submitted).
- Ahern K. R., P. Deewatthanawong, J. Schares, M. Muszynski, R. Weeks, E. Vollbrecht, J. Duvick, V. P. Brendel and T. P. Brutnell (2009) Regional mutagenesis using *Dissociation* in maize. *Methods* (in press).
- Harjes, C.E., T.R. Rocheford, L. Bai, T.P. Brutnell, C.B. Kandianis, S.G. Sowinski, A.E. Stapleton, R. Vallabhaneni, M. Williams, E.T. Wurtzel, J. Yan, E.S. Buckler (2008) Natural genetic variation in lycopene epsilon cyclase tapped for maize biofortification. *Science* 319:330-333.
- Covshoff, S., W. Majeran, P. Liu, J.M Kolkman, K.J. van Wijk and T.P. Brutnell (2008) Deregulation of maize C4 photosynthetic development in a mesophyll cell-defective mutant. *Plant Physiol* 146:1469-1481.
- Sawers, R.J.H., P. Liu, K. Anufrikova, J.T.G. Hwang and T.P. Brutnell (2007) A multi-treatment experimental system to examine photosynthetic differentiation in the maize leaf, *BMC Genomics* 8:12.

Significant Publications:

- Bai L., E. H. Kim, D. Dellapenna and T.P. Brutnell (2009) Novel lycopene epsilon cyclase activities in maize revealed through perturbation of carotenoid biosynthesis. *Plant J* 59: 588-599.
- Zelitch, I., N.P. Schultes, R.B. Peterson, P. Brown and T.P. Brutnell (2009) High glycolate oxidase activity is required for survival of maize in normal air. *Plant Physiol* 149:195-204.
- Conrad, L.J., L. Bai, K. Ahern, **K. Dusingberre***, **D.P. Kane*** and T.P. Brutnell (2007) State II *Dissociation (Ds)* element formation following *Activator (Ac)* excision in maize, *Genetics* 177:737-747.
- Sheehan, M.J., **L.M. Kennedy***, D. Costich and T.P. Brutnell (2007) Subfunctionalization of *PhyB1* and *PhyB2* in the control of seedling and mature plant traits in maize. *Plant J.* 49:338-353.
- Bai L, M. Singh, **L. Pitt***, **M. Sweeney*** and T.P. Brutnell (2007) Generating novel allelic variation through *Activator* insertional mutagenesis in maize. *Genetics* 175:981-992.

* **undergraduate students supported through NSF funding**

Synergistic Activities:

Outreach Activities

I led development of a Cornell Summer Internship Program that served as a foundation for our current REU program at Cornell (<http://www.bti.cornell.edu/educationInternships.php>). I have also developed a high school teacher training program (<http://www.bti.cornell.edu/educationTeacherPrograms.php>) with the goal of introducing concepts of plant genomics research into the high school science curriculum. These programs have been developed to encourage interaction between research scientists, students and educators and increase the participation of students from traditionally underrepresented groups in NSF-funded research.

Scientific Service

2009 Genotype to Phenotype Steering Committee Member, iPlant
2007 – present Member, Maize Genetics Executive Committee
2008 Chair, Maize Genetics Conference Steering Committee
2006 – present Associate Editor, Genetics
2005 – present Consultant, Monsanto
2005 – 2007 Panel Member, USDA
2004 – present Panel Member, site visit Team Member and PGRP-project Advisor, NSF
2000 – present *ad hoc* reviewer for Genetics, Genome Res, Mol Genet Genomics, Nat Genet, Plant Cell, Plant J, Plant Physiol, PLoS Biol, PNAS, NSF, USDA, DOE
2000 – present Member, American Association for the Advancement of Science, American Society of Plant Biology, Genetics Society of America

Teaching Experience

Molecular Techniques in Plant Science, Cold Spring Harbor Laboratory. I co-organized this three week course in plant molecular biology and genomics techniques (summer).

Light Signal Transduction in Plants, BIOPL4829, Dept. of Plant Biology, Cornell University. I teach a four week module on light signaling for graduate students and senior undergraduates (spring term).

Advanced Plant Genetics, PLBR 6060, Dept. of Plant Breeding, Cornell University. I teach two classes on plant transposable elements in this graduate level course in plant genetics (spring term).

Methods of Plant Breeding, PLBR 4060, Dept. of Plant Breeding, Cornell University, I organize a half-day lab on maize genetics (fall term).

Collaborators and Other Affiliations:

(i) Collaborators:

Volker Brendel (Iowa State Univ.)	Torbert Rocheford (Purdue Univ.)
Richard Bruskiewich (IRRI)	Jocelyn Rose (Cornell University)
Edward Buckler (Cornell Univ./USDA)	Neil Schultes (Conn. Ag. Exp. Station)
Thomas Clemente (Univ. of Nebraska)	Ann Stapelton (NCSU)
Dean DellaPenna (Michigan State Univ.)	David Stern (Boyce Thompson Inst.)
Jon Duvick (Iowa State Univ.)	Qi Sun (Cornell University)
Ruth Grene (Virginia Tech)	Matthew Terry (Univ. of Southampton, UK)
Steve Huber (Purdue Univ.)	Robert Turgeon (Cornell Univ.)
Matthew Hudson (Univ. of Illinois)	Klaas van Wijk (Cornell Univ.)
Pankaj, Jaiswal (Cornell Univ.)	Rick Vierstra (Univ. of Wisconsin)
Steve Kresovich (Cornell Univ.)	Erik Vollbrecht (Iowa State Univ.)
Peng Liu (Iowa State Univ.)	Hiayang Wang (Boyce Thompson Inst.)
Mike Muszynski (Iowa State Univ.)	Steve Welch (Kansas State)
Chris Myers (Cornell Univ.)	Susan Wessler (Univ. of Georgia)
Tim Nelson (Yale University)	Mark Williams (Dupont)
Richard Peterson (Conn. Ag. Exp. Station)	Elli Wurtzel (Lehman College)
Sharon Regan (Queen's Univ.)	Israel Zelitch (Conn. Ag. Exp. Station)
Tom Ruff (Monsanto)	Xinguang Zhu (MPI-Shanghai)

(ii) Graduate and Postdoctoral Advisors: Stephen Dellaporta (Yale University), Jane Langdale (Univ. of Oxford)
(iii) Thesis Advisor (7): Ling Bai, Liza Conrad, Sarah Covshoff, Patrice Dubois, Jake Mace, Nicole Hanley Markelz, Moira Sheehan (all Cornell University)
Postgraduate-Scholar Sponsor (9): Denise Costich, Tesfamichael Kebrom, Judith Kolkman, Kazuhiro Kikuchi, Pinghua Li, Anasuya Mohapatra, Ruairidh Sawers, Manjit Singh, Lin Wang (all Boyce Thompson Inst.).