

SAMUEL A. BELTETON, PH.D

CONTACT INFORMATION

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PROFESSIONAL PREPARATION

Plant molecular biology, PhD 2020 Purdue University, West Lafayette, IN

Microbiology, BS 2012 Purdue University, West Lafayette, IN

PROFESSIONAL APPOINTMENTS

Director of Microscope Suite 2021-Current New Mexico State University, Las Cruces, NM

Senior researcher 2021 Purdue University, West Lafayette, IN

PUBLICATIONS

- Plant Physiology*, 2021 Wenlong Li, Sedighe Keynia, **Samuel A Belteton**, Faezeh Afshar-Hatam, Daniel B Szymanski, Joseph A Turner, Protocol for mapping the variability in cell wall mechanical bending behavior in living leaf pavement cells.
Contribution: Experimental design. Live-cell and TEM imaging. Manuscript preparation
- Nature Plant*, 2021 **Samuel A. Belteton**, Wenlong Li, Makoto Yanagisawa, Faezeh A. Hatam, Madeline I. Quinn, Margarete K. Szymanski, Mathew W. Marley, Joseph A. Turner, Daniel B. Szymanski.
Real-time conversion of tissue-scale mechanical forces into an interdigitated growth pattern.
Contribution: Experimental design. Image acquisition. Data analysis.
Manuscript preparation
- Plant Physiology*, 2019 Jeh Haur Wong, Takehide Kato, **Samuel A. Belteton**, Rie Shimizu, Nene Kinoshita, Takumi Higaki, Yuichi Sakumura, Daniel B. Szymanski and Takashi Hashimoto.
Basic Proline-Rich Protein-Mediated Microtubules Are Essential for Lobe Growth and Flattened Cell Geometry.
Contribution: Experimental design. Image acquisition. Data analysis.
Manuscript preparation
- Plant Physiology*, 2017 **Belteton, S.**, Sawchuk, M. G., Donohoe, B. S., Scarpella, E., Szymanski, D. B. Reassessing the roles of PIN proteins and anticlinal microtubules during pavement cell morphogenesis.
Contribution: Experimental design. Image acquisition. Software creation. Data analysis. Manuscript preparation
Shared cover image
- Plant Physiology*, 2016 Wu, T.* , **Belteton, S.*** , Lunsford, J., Szymanski, D.B., Umulis, D.
Quantitative image analysis of pavement cell morphogenesis with *LobeFinder*.
*Authors contributed equally.
Contribution: Image acquisition. Software testing, design, and troubleshooting. Manually curated pavement cell results and analysis. Manuscript preparation.
Cover Image

BMC Bioinformatics, 2016
Delibaltov D.L., Gaur, U., Kim, J., Kourakis, M., Newman-Smith, E., Smith W., **Belteton, S.**, Szymanski, D.B., Manjunath, B.S.
CellECT: Cell Evolution Capturing Tool.
Contribution: Image acquisition. Comparison of software results with manually curated pavement cells. Software troubleshooting. Manuscript preparation.

Nature Plant, 2015
Yanagisawa, M., Desyatova, A.S., **Belteton, S.**, M., M.E., Turner, J.A., and Szymanski, D.B.
Patterning mechanisms of cytoskeletal and cell wall systems during leaf trichome morphogenesis.
Contribution: Created a new 4D reflection imaging method. Cell wall thickness measurements from TEM. Manuscript preparation.

AWARDS

2019 Weier Outstanding Graduate Student Research Award.
2019 22nd Penn State Plant Cell Dynamics VIII travel grant recipient.
2018 Purdue Research Foundation Fellowship.
2017 Midwest plant cell dynamics travel grant recipient.
2016 URM-ICAR travel grant recipient.

TEACHING EXPERIENCE

Fall 2020 Botany 590; Cell biology of Plants.
Image processing and quantification module
Purdue University. West Lafayette, IN.
Fall 2017 Agronomy 321; Genetics.
Purdue University. West Lafayette, IN.
2015||2016 Botany 110; Introduction to plant science.
Purdue University. West Lafayette, IN.
June 2014 Long-term live-cell imaging workshop.
24 participant
Midwest plant cell dynamic conference. Madison, WI.

SKILLS

Laboratory / Research Image processing and analysis
Fluorescence, light, and reflected microscopy
Molecular (gene) cloning
Programming languages Python, ImageJ Scripting, R, Matlab
Content Editing LaTeX, Microsoft Office Suite (Word, Excel, PowerPoint, Access, Outlook),
WordPress
Graphic Design Inkscape, GIMP, Adobe Illustrator, Adobe Photoshop