

## Aymerick Eudes, Ph.D.

Deputy Director of Cell Wall Engineering  
Joint BioEnergy Institute, Emeryville, CA  
Lawrence Berkeley National Laboratory

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### Research Experience

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- Oct. 2016 – Present**      **Biological Engineer Career Scientist**  
Lawrence Berkeley National Laboratory  
Biosciences Area  
Berkeley, CA
- April 2016 – Present**      **Deputy Director of Cell Wall Engineering**  
Joint BioEnergy Institute, Feedstocks Division,  
Emeryville, CA.
- Jan. 2011 – Oct. 2016**      **Biologist Project Scientist**  
Joint BioEnergy Institute, Feedstocks Division,  
Emeryville, CA  
*Supervisor:* Dr Dominique Loqué.
- Jan. 2009 - Dec. 2010**      **Biologist Post-Doctoral Fellow**  
Joint BioEnergy Institute, Feedstocks Division,  
Emeryville, CA  
*Supervisor:* Dr Dominique Loqué.
- Jan. 2006 - Dec. 2008**      **Postdoctoral Associate**  
University of Florida, Horticultural Sciences.  
*Supervisor:* Prof. Andrew D. Hanson.
- Sep. 2001 - Dec. 2005**      **Ph.D. and Master Student**  
INRA Versailles, Cellular Biology Laboratory (France).  
*Supervisor:* Prof. Lise Jouanin.
- Apr. 2001 - Aug. 2001**      **Undergraduate Student**  
INRA Dijon (France), Legume Physiology and Genetics Research Unit.  
*Supervisor:* Prof. Sergio J. Ochatt.

### Training / Supervisory Experience

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- Jun. 2016 – Oct. 2016**      Saeed Nassef, Undergraduate student, UC Berkeley  
**Mar. 2016 – Sep. 2016**      Roland Berthomieu, Master student, École Polytechnique (France)  
**Mar. 2016 – Sep. 2016**      Lucien Roux, Master student, École Polytechnique Fédérale de Lausanne (Switzerland)  
**Feb. 2016 – Apr. 2017**      Anagh Sinha, , Undergraduate student, UC Berkeley

<b>Nov. 2014 – June 2016</b>	Nanxia Zhao, Undergraduate student, UC Berkeley
<b>Feb. 2014– Sep. 2016</b>	Veronica Teixeira Benites, Undergraduate student, UC San Francisco
<b>Jul. 2015 – Oct. 2015</b>	Maxence Mouille, Master student, University of Tours (France)
<b>Feb. 2014 – May 2015</b>	Sasha Yogiswara, Undergraduate student, UC Berkeley
<b>Jan. – Jul. 2011</b>	Valerie Cornuault, Master student, University of Leeds (UK)
<b>Jan. - Jul. 2010</b>	Davy Baratiny, Master student, University of Strasbourg (France)
<b>Jan. - Aug. 2005</b>	Guillaume Le Mignon, Master student, University of Paris VII (France)

## Education

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- 2005     **Doctorate****  
University of Paris XI, France  
French National Institute for Agricultural Research (INRA)  
Versailles, Cellular Biology Laboratory  
*Supervisor:* Prof. Lise Jouanin  
*Title of thesis:* Characterization of new genes involved in secondary cell wall formation in Arabidopsis.
- 2002     **Master's Degree****  
University of Paris XI / AgroParisTech, France  
*Subject:* Plant Molecular and Cellular Physiology  
*Dissertation:* Identification of new genes involved in secondary cell wall formation in Arabidopsis.
- 2001     **Bachelor's Degree****  
University of Caen, France  
*Subject:* Biology and Ecosystems

## Publications

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- 21) Wu W, Dutta T, Varman A, **Eudes A**, Manalansan B, Loqué D, Singh S (2017). Lignin Valorization: Two Hybrid Biochemical Routes for the Conversion of Polymeric Lignin into Value-added Chemicals. **Sci Rep** (in press).
- 20) **Eudes A**, Dutta T, Deng K, Jacquet N, Sinha A, Benites VT, Baidoo EEK, Richel A, Sattler SE, Northen TR, Singh S, Simmons BA, Loqué D (2017) SbCOMT (Bmr12) is involved in the biosynthesis of triclin-lignin in sorghum. **PLOS ONE** 12:e0178160.
- 19) **Eudes A**, Mouille M, Robinson DS, Benites VT, Wang G, Roux L, Tsai YL, Baidoo EE, Chiu TY, Heazlewood JL, Scheller HV, Mukhopadhyay A, Keasling JD, Deutsch S, Loqué D (2016) Exploiting members of the BAHD acyltransferase family to synthesize multiple hydroxycinnamate and benzoate conjugates in yeast. **Microb Cell Fact** 15:198.
- 18) **Eudes A**, Zhao N, Sathitsuksanoh N, Baidoo E, Lao J, Wang G, Yogiswara S, Lee TS, Singh S, Mortimer J, Keasling J, Simmons B and Loque D (2016) Expression of S-adenosylmethionine Hydrolase in Tissues Synthesizing Secondary Cell Walls Alters Specific Methylated Cell Wall Fractions and Improves Biomass Digestibility. **Frontiers Bioeng Biotechnol** 4:58.
- 17) **Eudes A**, Yogiswara S, Wang G, Teixeira Benites V, Baidoo EEK, Lee TS, Keasling JD, Loqué D (2016) Exploiting The Substrate Promiscuity of Hydroxycinnamoyl-CoA:shikimate Hydroxycinnamoyl Transferase to Reduce Lignin. **Plant Cell Physiol** 57:568-579.

- 16) **Eudes A**, Teixeira Benites V, Wang G, Baidoo EEK, Lee TS, Keasling JD, Loqué D (2015) Precursor-directed combinatorial biosynthesis of cinnamoyl, dihydrocinnamoyl, and benzoyl anthranilates in *Saccharomyces cerevisiae*. **PLOS ONE** 10:e0138972.
- 15) **Eudes A**, Sathitsuksanoh N, Baidoo EEK, George A, Liang Y, Yang F, Singh S, Keasling JD, Simmons BA, Loqué D (2014) Expression of a bacterial 3-dehydroshikimate dehydratase reduces lignin content and improves biomass saccharification efficiency. **Plant Biotech J** 13:1241-1250.
- 14) **Eudes A**, Liang Y, Mitra P, Loqué D (2014) Lignin bioengineering. *Curr Opin Biotechnol* 26:189-198.
- 13) **Eudes A**, Juminaga A, Baidoo EE, Collins FW, Keasling JD, Loqué D (2013) Production of hydroxycinnamoyl anthranilates from glucose in *Escherichia coli*. **Microb Cell Fact** 12:62.
- 12) **Eudes A**, George A, Mukerjee P, Kim JS, Pollet B, Benke PI, Yang F, Mitra P, Sun L, Cetinkol OP, Chabout S, Mouille G, Soubigou-Taconnat L, Balzergue S, Singh S, Holmes BM, Mukhopadhyay A, Keasling JD, Simmons BA, Lapierre C, Ralph J, Loqué D (2012) Biosynthesis and incorporation of side-chain-truncated lignin monomers to reduce lignin polymerization and enhance saccharification. **Plant Biotech J** 10:609-620.
- 11) Loque D, **Eudes A**, Yang F (2011) Biomass availability and sustainability for biofuels, in *Chemical and Biochemical Catalysis for Next Generation Biofuels*. Royal Society of Chemistry. Energy and Environment Series n°4. B. A. Simmons eds. 5-32.
- 10) **Eudes A**, Baidoo EE, Yang F, Burd H, Hadi MZ, Collins FW, Keasling JD, Loqué D (2011) Production of tranilast [N-(3',4'-dimethoxycinnamoyl)-anthranilic acid] and its analogs in yeast *Saccharomyces cerevisiae*. **Appl Microbiol Biotechnol** 89:989-1000.
- 9) **Eudes A**, Kunji ER, Noiriél A, Klaus SM, Vickers TJ, Beverley SM, Gregory JF, Hanson AD (2010) Identification of transport-critical residues in a folate transporter from the folate-biopterin transporter (FBT) family. **J Biol Chem** 285:2867-75.
- 8) Rodionov DA, Hebbeln P, **Eudes A**, Ter Beek J, Rodionova IA, Erkens GB, Slotboom DJ, Gelfand MS, Osterman AL, Hanson AD, Eitinger T (2009) A novel class of modular transporters for vitamins in prokaryotes. **J Bacteriol** 191:42-51.
- 7) **Eudes A**, Erkens GB, Slotboom DJ, Rodionov DA, Naponelli V, Hanson AD (2008) Identification of Genes encoding the folate- and thiamine-binding membrane proteins in Firmicutes. **J Bacteriol** 190:7591-94.
- 6) **Eudes A**, Mouille G, Thévenin J, Goyallon A, Minic Z, Jouanin L (2008) Purification, cloning and functional characterization of an endogenous beta-glucuronidase in *Arabidopsis thaliana*. **Plant Cell Physiol** 49:1331-41.
- 5) **Eudes A**, Bozzo GG, Waller JC, Naponelli V, Lim EK, Bowles DJ, Gregory JF 3rd, Hanson AD. (2008) Metabolism of the folate precursor p-aminobenzoate in plants: Glucose ester formation and vacuolar storage. **J Biol Chem** 283:15451-59.
- 4) **Eudes A**, Pollet B, Sibout R, Do CT, Séguin A, Lapierre C, Jouanin L (2006) Evidence for a role of AtCAD1 in lignification of elongating stems of *Arabidopsis thaliana*. **Planta** 225:23-39.
- 3) Sibout R, **Eudes A**, Mouille G, Pollet B, Lapierre C, Jouanin L, Séguin A (2005) CINNAMYL ALCOHOL DEHYDROGENASE-C and -D are the primary genes involved in lignin biosynthesis in the floral stem of *Arabidopsis*. **Plant Cell** 17:2059-76.
- 2) Sibout R, **Eudes A**, Pollet B, Goujon T, Mila I, Granier F, Séguin A, Lapierre C, Jouanin L (2003) Expression pattern of two paralogs encoding cinnamyl alcohol dehydrogenases in *Arabidopsis*. Isolation and characterization of the corresponding mutants. **Plant Physiol** 132:848-60.

1) Goujon T, Sibout R, **Eudes A**, MacKay J, Jouanin L (2003) Genes involved in the biosynthesis of lignin precursors in *Arabidopsis thaliana*. **Plant Physiol Biochem** 41:677–87.

## Patents

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- 1) US Patent Application 15/056,982: Loqué D and **Eudes A**: *Modified plants and methods for producing modified lignin by modulating expression of acyltransferases.*
- 2) US Patent Application 14/774,614: Loqué D and **Eudes A**: *Tissue Specific Reduction of Lignin.*
- 3) US Patent Application 14/232,018: Loqué D and **Eudes A**: *Lignification Reduction in Plants.*
- 4) US Patent Application 13/274,244: Loqué D and **Eudes A**: *Host Cells and Methods for Producing Cinnamoyl Anthranilate and Analogs Thereof.*

## Scientific Presentations

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- 07/2017: 6th International Conference on Plant Cell Wall Biology. Dalian, China.
- 05/2017: 39<sup>th</sup> Symposium on Biotechnology for Fuels and Chemicals. San Francisco, CA, USA. INVITED SPEAKER
- 06/2016: Lignobiotech IV Symposium, Madrid, Spain. Co-chairman' session.
- 07/2015: Gordon Research Conferences – Plant Metabolic Engineering, Waterville Valley, NH, USA. INVITED SPEAKER
- 08/2014: Lignin 2014 – Biosynthesis and Utilization, Umeå, Sweden. INVITED SPEAKER
- 07/2013: Gordon Research Conferences – Plant Metabolic Engineering, Waterville Valley, NH, USA
- 10/2012: Lignobiotech II Symposium, Fukuoka, Japan. INVITED SPEAKER
- 03/2011: Keystone Symposium Conference on Biofuels, Singapore
- 07/2010: 12<sup>th</sup> Plant Cell Wall Meeting, Porto, Portugal
- 07/2009: Synthetic Biology Workshop by the Danish Ministry of Science, July, Berkeley, California
- 07/2009: ASPB Meeting, Honolulu, HI, USA
- 07/2008: ASPB Meeting, Merida, Mexico
- 07/2007: ASPB Meeting, Chicago, IL, USA
- 06/2005: Polyphenols and Micronutrients Meeting, Versailles, France. INVITED SPEAKER
- 09/2005: 4<sup>th</sup> French Cell Wall Meeting, Rouen, France. INVITED SPEAKER
- 06/2005: 16<sup>th</sup> International Conference on Arabidopsis Research, Madison, WI, USA
- 05/2005: International Workshop on Growing Plants for Increased Nutritional Value, Stavanger, Norway
- 08/2005: 10<sup>th</sup> Plant Cell Wall Meeting, Sorrento, Italy. INVITED SPEAKER
- 07/2004: Plant Polysaccharide Workshop – Satellite meeting of the 22<sup>nd</sup> International Carbohydrate symposium, York, UK

05/2004: French Molecular Biology of Woody Species Society, Clermont-Ferrand, France. INVITED SPEAKER

11/2003: 2<sup>nd</sup> French Cell Wall Meeting, November 6-7 (2003), Le Croisic, France

07/2003: 5<sup>th</sup> French Plant Physiology Society Meeting, "Plant Biology and the Challenge of Functional Genomics", Orsay, France.

03/2003: Genoplante Meeting, Poitiers, France

## Synergistic Activities

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Collaborative work with Afingen Inc. and Futuragene (Plant biotech companies).

Member of the American Society of Plant Biologists (ASPB)

Reviewer for PNAS, *PLOS ONE*, *Biotechnology for Biofuels*, *Applied Biochemistry and Biotechnology*, *Plant Science*, *Scientific Reports*, *BioEnergy Research*, *Plant Biotechnology Journal*, *Nature Communications*, *Bioresource Technology*, *RSC Advances*, *Planta*, *ACS Sustainable Chemistry & Engineering*, *Frontiers in Plant Science*, *New Phytologist*.

Member panel for DOE SBIR/STTR FY 2017 Phase II

Member panel for DOE JGI 2017 semi-annual CSP Synthetic Biology

## Honors and Awards

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Joint BioEnergy Institute Research Contribution Award (2015)

Joint BioEnergy Institute Inventor Award (2014)

## References

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**Dr. Dominique Loqué**  
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