

Fred Asiegbu: December 10th 2018

Curriculum vitae

1a. NAME & ADDRESS

NAME (SURNAME FIRST); Asiegbu, Frederick Obioma

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2a. EDUCATION

SCHOOL(S)

PERIOD

DEGREE/DATE

Swedish University of Agriculture

1998 Assoc. Prof. in Forest

Microbiology & Pathology (docent)

University of Strathclyde, Glasgow, UK

1988 - 1991 Ph.D, Biotechnology (1992)

University of Jos, Nigeria

1984 - 1985 M.Sc, Applied Microbiology
and Plant Pathology (1985)

University of Benin, Nigeria

1979 - 1983 B. Sc (Hons), Botany, Second

Class Upper division , 2(1) (1983)

2b. OTHER EDUCATION & TRAINING

-Pedagogic course at SLU (1997/1998)

-Leadership training course, Espoo organised by Helsinki University (2008)

2c. ADJUNCT PROFESSORSHIP

1998: Docent in Forest Microbiology and Pathology, SLU, Uppsala

3. CURRENT POSITION

2007 to date: Professor of Forest Pathology, University of Helsinki, Finland

2016 (October) to date: Visiting Professor, Nanjing Forestry University, Nanjing, China

4. PREVIOUS WORK EXPERIENCE

1998 - 2007: Associate Professor (Docent) in Forest Microbiology and Pathology, SLU, Uppsala

1996: Research Associate, Department of Forest Mycology & Pathology, SLU, Uppsala

1995 – 1996: Postdoctoral scientist, Department of Plant Pathology, Univ. of California, Riverside, USA.

1991 – 1994: Postdoctoral scientist, Department of Forest Mycology and Pathology, SLU, Uppsala

6. MAJOR RESEARCH FUNDING (LAST FIFTEEN YEARS)

Have received grants from the following grant authorities; Carl Tryggers Stiftelse (500,000: 2007 - 2009), FORMAS (2.7 million KR 2007 – 2009), STINT (2.7 million KR: 2001 – 2006), Carl Tryggers (700,000KR; 2004 – 2006), SCA (600,000KR; 2004– 2008) and Vetenskapsrådet (VR) (640,000KR (2002 – 2004), NorFa (308, 000 KR ;2001); co-applicant for research grant with Prof. Jan Stenlid (FORMAS, 5.6 million KR 2002 – 2006); FORMAS, 2.8 million KR 2007 – 2010), Maj & Tor Nessling foundation (66,000 euros: 2008 - 2010), Helsinki University Research Fund (115,000 euros; 2008 - 2010), Academy of Finland (800,000 euros; 2010 – 2013), Academy Fidipro grant together with Prof Jari Valkonen (1.34 million euros, 2010 – 2015), Academy of Finland (725,000euros;

2014 – September 2018), Academy of Finland BioFuture2025 (319,000 euros; 2017 – 2020).

7. LEADERSHIP & SUPERVISION (postdoc, doctoral dissertations & licentiates): Four doctoral thesis from my research group have been awarded “**Pass with distinction**”. One of the thesis received faculty prize for the best doctoral thesis. Also four master’s thesis received Finnish Forest Science Society prize for the “Best thesis”. I am an elected member of the “**Finnish Academy of Science and Letters**”. In 2016, I was appointed “**Visiting Professor**” at Nanjing Forestry University, China”. I am a serving member of grant application evaluation board for “**The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (FORMAS)**”.

7a. POSTDOC SUPERVISION (total 19) :

i. Jarmila Nahalkova (2001-2002); **ii.** Guosheng Li (2002 - 2004); **iii.** Aleksandra Adomas (2007); **iv.** Nina Lehr (2008 - 2009); **v.** Chaowen Xiao (2009 – 2010); **vi.** Karl Lunden (2010 – 2011); **vii.** Hsiao-Che Kuo (co-supervisor, 2011 - 2013); **viii.** Andriy Kovalchuk (2011 -); **ix.** Dmitry Schigel (2012 – 2012, 3 months); **x.** Hui Sun (2012 - 2015); **xi.** Anthony Mgbeahuruike (2012 – 2013); **xii.** Riikka Linnakoski (2013 – 2016); **xiii.** Tommaso Raffaello (2013 - 2018); **xiv.** Jaeyoung Choi (2014 – 2015); **xv.** Julia Quintana (2014 – 2015); **xvi.** Emad Jaber (2014 – 2015); **xvii.** Eeva Terhonen (Sept. 2015 - February 2016); **xviii.** Lihua Zhu (2015: six months); **xix.** Ren Fei (2017 – 2018).

7b. Ph.D student supervision (Main[M]/Deputy[D]) (total 16 completed):

i. Frank Mrema (Ph.D, 2001), (D) **ii.** Aleksandra Adomas (Ph.D, 2007) (M); **iii.** Greg Heller (Ph.D, 2008), (D); **iv.** John Tumuhairwe (Ph.D, 2009), (D); **v.** Karl Lunden (Ph.D, 2010) (M); **vi.** Sanjewani Sooriyaarachchi (Ph.D, 2010) (D); **vii.** Jinrong Lu (Ph.D 2011) (M); **viii.** Hui Sun (2011) (M); **ix.** Anthony Mgbeahuruike (2012) (M); **x.** Tommaso Raffaello (2013) (M); **xi.** Emad Jaber (2014) (M); **xii.** Chen Hongxin (2015) (M); **xiii.** Eeva Terhonen (2015) (M); **xiv.** Susanna Keriö (2015) (M); **xv.** Nicolas Detry (2015) (D); **xvi.** Abbot Oghenekaro (2016) (M); **xvii.** Jiayao Wu (2017) (D); **xviii.** Zhen Zeng (2019) (M); **xix.** Mukrimin (2019) (M); **xxi.** Ximena Silva (2020) (M); **xxi.** Zilan Wen (2021) (M); **xxii.** Mengxia Liu (2022) (M)

7c. M. Phil (Licentiate) student supervision:

i. Selim Abu (2004); **ii.** Anthony Mgbeahuruike (2009)

7d. M.Sc STUDENT'S SUPERVISION:

i. Karl Lunden (2003); **ii.** Teresa Marco(2009); **iii.** Susanna Elisa Keriö (2010); **iv.** Ximena Silvapalacios (2011); **v.** Suvi Niemi (2011); **vi.** Nevena Hristozova (2012); **vii.** Ninni Marjaana Klingberg (12); **viii.** Heidi Oranen (co-supervisor,(2013); **ix.** Pauli Rainer Rainio (2013); **x.** Osmo Suominen (2012-); **xi.** Bikash Baral (2015); **xii.** Erik Stewart (2016); **xiii.** Mengxia Liu (2016), **xiv.** Umair Awan (2017), **xv.** Artin Zarsav (2019)

7e. Student Trainees/guest student researchers (total 18):

i. Marten Denekamp (Netherlands), **ii.** Martin Linder (Sweden), **iii.** Monika Seidel (Poland), **iv.** Ogochukwu Anene (2009, Nigeria), **v.** Paige Cox (Atlantis programme: 2010, USA), **vi.** Nuura Hassan (2010: Helsingin tekniikan alan oppilaitos), **vii.** Tiina Kohtamäki (2011: Helsingin tekniikan alan oppilaitos), **viii.** Julia Quintana González (Spain, 2012), **ix.** Demi Tristan Djajadi (3 months, 2012/2013), **x.** Lassi Saesmaa (2013, 2 months: Helsingin

tekniikan alan oppilaitos), xi. Petri Palmu (2013, 2 months: Helsingin tekniikan alan oppilaitos **xii.** Sara Ormeño Moncalvillo (2014, 3 months; Spain), xiii. Claudia Pelegrín Carballo (2014, 3 months: Spain), **xiv.** Alina Howener (2016, 3 months; Germany), **xv.** Maria Forss (2016, 3 months; Helsingin tekniikan alan oppilaitos, Finland), **xvi.** Yemane Ghebrihiwet (2017, 3 months; Eritrea), **xvii.** Lise Rejasse (2018, 2 months; France), **xviii.** Ha-Thanh Truong (2018, 2 months; France)

7f. Board member graduate schools

-Board Member of the Biotechnology board at Helsinki University, with responsibility for "MBiot" students: http://www.helsinki.fi/biotech/faq/contact_details.html (2008 - 2016)

-deputy member of the board for International master's programme in forestry and Business in the faculty of Agriculture and Forestry (2007 – 2016)

-Board Member: Biological Interaction Graduate school (BIOINT): <https://www.jyu.fi/bioenv/en/divisions/eko/bioint/people/board> (2009 - 2014)

-Board member: Doctoral programme in plant sciences (DPPS): <http://www.helsinki.fi/dpps/board.htm> (2015 - 2021)

8. COURSE TEACHING

8: Responsible for the following courses:

i. FOR 231: Basic biotechnology applications in Forestry (5 cr.)

ii. FOR 232: Forest Microbiology (10 cr.)

iii. FOR 233: Advanced forest mycology & Pathology (10 cr.)

iv. MPAT 212: Tropical forest pathology (organised every 2 years)

v. MPAT 225: special forest pathology courses e.g. seminars, scientific writing (5 cr.)

vi. MEK 350: Responsible for departmental Research Seminar (2012/2013)

vii. Practical course in applied Bioinformatics to doctoral students (2012 – 2016, 5 cr.)

viii. FOR 271: Responsible for practical course in applied Bioinformatics for Forestry and Agricultural students (5 cr.)

8b. Organised or contributed or co-ordinated several postgraduate courses:

i. Advanced courses in environmental interactions:engineered plant immunity March/April 2018). <https://courses.helsinki.fi/en/dpps-105/123265025>

ii. Plant-Pathogen Co-Evolution 592011 (2-4 ECTS credits: October/December 2016) <http://www.helsinki.fi/dpps/plantpathogen2016.htm>

iii. Minisymposium on plant – pathogen co-evolution; antimicrobial defences of plants/trees (October 29- 31st, 2014). <http://www.helsinki.fi/dpps/courses.htm>

-Minisymposium on signalling in plant pathogen interactions (November 14th, 2013). http://www.helsinki.fi/vgsb/courses_events/Plant_pathogen_symposium.htm

iv. NOVA plant pathology course on innate immunity in plants (June 2012): <http://www2.nova-university.org/home/cpage.php?cnr=09-111012-434>

-Fungal Interaction course (http://www.biocenter.helsinki.fi/viikkigs/courses_events/Fungal_interactions.htm)

v. Innate Immunity of Plants 52986 (1-2 ECTS): <http://www.helsinki.fi/fdpps/innateimmunity2011.htm>

vi. **Current Challenges in Plant Biology - Biotic Stress Signalling (592003):** <http://www.helsinki.fi/fdpps/currentchallenges2010.htm>

vi. **Innate immunity of plants: basal defence and pathogen counter defence:** http://www.helsinki.fi/ppvir/research/nova/course_programme.pdf

- vii. Tropical forest mycology & pathology course March 28 – 30th , 2011 (<http://blogs.helsinki.fi/forestpathology/courses-in-english/tropical-forest-mycology-and-pathology/>)
- viii. Fungal Interaction course September 13 – 15th, 2010 (http://www.biocenter.helsinki.fi/viikkigs/courses_events/Fungal_interactions.htm)
- ix. Presently involved in teaching the following courses at Helsinki university: Molecular epidemiology, Forest Pathology, Forest microbiology, Fungal Interactions, Forest Ecology, Biotechnological applications in forestry
- x. Responsible for a D-level course on Forest Microbiology: <http://www.mykopat.slu.se/kurser/forestmicro/formic.html> (1999 - 2006)
- xi. Responsible for post graduate course on Fungal Genomics: <http://www.mykopat.slu.se/kurser/fungen/indexen.htm> (2001 -2005)
-Co-ordinator of a NorFa course on “Recent Advances in Forest Microbiology” Nov. 5 – 17, 2001 (<http://www.mykopat.slu.se/kurser/norfakurs/norfastart.html>)
- xii. Initiator of the first serial (yearly) Nordic postgraduate course on “Recent advances in Forest Microbiology” hosted in Finland August, 2002 (<http://www.HONEYBEE.helsinki.fi/nova2002>); Sweden May, 2003 (<http://www.mykopat.slu.se/kurser/Nova/index1.html>); Denmark 2004 (http://www.nova-university.org/eedu4_phd_f04.htm) and Norway 2005.

9. SCIENTIFIC AWARDS AND HONOURS

- Commonwealth Universities (UK) scholarship to University of Strathclyde, Glasgow, UK (1988 – 1991).
- National Merit Award (scholarship), at University of Benin, Nigeria (1979 – 1983)
- Primary host together with Jari Valkonen to Fidipro professor (Yong-Hwan Lee): The very first of such programme in the faculty of Agriculture and forestry, Helsinki University (2010 – 2015)
- Appointed visiting Professor, **Nanjing Forestry University**, Nanjing, China (2016)
- Elected member **Finnish Academy of Science and Letters** (2017)

10. OTHER SCIENTIFIC EXPERT POSITIONS

10a. Member of Ph.D evaluation and pre-examiner of doctoral thesis

- i.** Dejene M (2004) (Swedish University of Agricultural Sciences, Uppsala); **ii.** Eeva Vainio (2008) (University of Helsinki, Finland); **iii.** Henrietta Grönberg (2008)(University of Helsinki, Finland); **iv.** Åsa Svanström (2013) (SLU, Uppsala); **v.** Mari Häkkinen (2014) (University of Helsinki, Finland); **vi.** Julia Quintana Gonzalez (2014)(Universidad Politecnica de Madrid, Spain); **vii.** Kathrin Blumenstein (2015) (Swedish University of Agricultural Sciences, Uppsala); **viii.** Kirsi Bromann (2015) (University of Helsinki).

10b. External examiner (opponent)

- i.** Johamma Puentes (2013: University of Eastern Finland, Joensuu) **ii.** Julia Quintana Gonzalez (2014: Universidad Politecnica de Madrid, Spain) **iii.** Ronishree Mangwanda (2016: University of Pretoria, South Africa) **iv.** José María Sanz Martín (2016: University of Salamanca, Spain) **v.** Angelica Marsberg-De Villiers (appointed: University of Pretoria, South Africa)

- 10c. National and International evaluations/assignments:** -External evaluator International Foundation for Science (**IFS**); -Reviewer of grant applications for Canadian National Research Council (**NSERC**); -Evaluator for university lecturer position in Forest pathology, Helsinki University; -Evaluator for Austrian National Research Council; -

Member of the European cost action on Endophytes in Biotechnology; - Evaluator National Science Foundation (**NSF, USA**); -Evaluator for Latvian National Research Council.
-Member of cost action on “**Pinestrength**”; -Member of the EU cost action group on endophytes in Biotechnology; -Co-ordinator of the **STINT** international bilateral programme (2001-2006) with North Carolina State University (NCSU), Raleigh, USA.
-Co-ordinator of Academy of Finland funded **Fidipro** project (2010 – 2015); -Member of Swedish grant application evaluation board (**FORMAS**); -Book Reviewer for Elsevier (2018)

11. MEMBERSHIPS AND POSITIONS OF TRUST IN SCIENTIFIC SOCIETIES

11a. Member of Editorial board of the following journals:

-**Frontiers in Microbiology (2017 -)**

<https://www.frontiersin.org/journals/microbiology/sections/fungi-and-their-interactions#>

-**Forests (2017 -)**

<http://www.mdpi.com/journal/forests/editors>

-**Journal of Plant Pathology (2016-)**

<http://sipav.org/main/jpp/index.php/jpp/pages/view/editorialBoard>

-**Applied & Environmental Microbiology (2014 – 2019):**

<http://aem.asm.org/site/misc/edboard.xhtml>

-**Biodiversity Management and Forestry (2014 -):**

<http://scitechnol.com/editorialboard-biodiversity-management-forestry.php>

-**AIMS Microbiology (2015 -):**

http://www.aimspress.com/aimsmicro/ch/reader/view_news.aspx?id=20141116103553001

-**Microorganisms (2018-)**

https://www.mdpi.com/journal/microorganisms/sectioneditors/environmental_microbiology

-**Board member Association of African Agricultural professionals in diaspora (AAAPD)**

11b. Referee for scientific journals: Referee for BMC Genomics, Fungal Genetics & Biology, Mycological Research, Fungal Biology, New Phytologist, Molecular Plant Microbe Interaction, FEMS Microbiology Letters, Phytopathologia, Canadian Journal of Botany, Forest Pathology, Mycologia, Journal of Environmental Quality, Physiologia Plantarum, Canadian Journal of Forest Research, Planta, Silva Fennica, Biocontrol Science & Technology, Tree Genetics and Genome, Planta, Applied Microbiology & Biotechnology, Tree physiology, Boreal forest Environment research, International Journal of Molecular Sciences, Canadian Journal of Forest Research, Forest Ecology & Management, International Journal of Biodeterioration and Biodegradation, Environmental Microbiology.

11c Invitations to give lectures/oral conference presentation: Over 50 invitation including:

-the University of Helsinki, Faculty of Agriculture and Forestry Alumni Lecture 2012

-IUFRO Foliage disease meeting Brno, Czech Republic, May, 2013:

-International Congress on Tree Biotechnology, Florence, Italy, June 2015

-Genetics of tree –parasite interaction, Orleans, France, August 2015

-IUFRO conference Beijing, China, October 2016.

-European Fungal Genetics Conference, Haifa Israel, Feb/march 2018

12a. PUBLICATIONS; ca 140 publications in international refereed journals, books and extended abstracts in conference proceedings.

12b. Presentation at International meetings and national conferences: ca 104 abstracts in conference presentations at various national and international scientific meetings.

Section 2. PUBLICATION LISTS

2a: Refereed journal publications

- 1. ASIEGBU FO, DANIEL G & JOHANSSON M. 1993.** Studies on infection of Norway spruce roots by *Heterobasidion annosum*. **Canadian Journal of Botany** 71: 1552 - 1561.
- 2. ASIEGBU FO, MORISSON I, PATERSON A & SMITH JE 1994a.** Analyses of fungal fermentation of lignocellulosic substrates using continuous culture rumen simulation. **Journal of General and Applied Microbiology** 40: 305 - 318.
- 3. ASIEGBU FO, DANIEL G & JOHANSSON M. 1994b.** Defence related reactions of seedling roots of Norway spruce to infection by *Heterobasidion annosum* (Fr.) Bref. **Physiological and Molecular Plant Pathology** 45: 1 - 19.
- 4. ASIEGBU FO, DENEKAMP M, DANIEL G & JOHANSSON M. 1995a.** Immunocytochemical localisation of pathogenesis related proteins in roots of Norway spruce infected with *Heterobasidion annosum*. **European Journal of Forest Pathology** 25 (3): 161 - 170.
- 5. ASIEGBU FO, DANIEL G & JOHANSSON M. 1995b.** Infection and disintegration of vascular tissues of non-suberized roots of spruce by *Heterobasidion annosum* and use of antibodies for characterising infection. **Mycopathologia** 129: 91 - 101.
- 6. ASIEGBU FO, MORISSON I, PATERSON A & SMITH JE 1995c.** Effect of plant cell wall phenolics and fungal metabolites on acetate and methane production under *in vitro* rumen conditions. **Journal of General and Applied Microbiology** 41: 475 - 485.
- 7. ASIEGBU FO, PATERSON A & SMITH JE 1996a.** Inhibition of cellulose saccharification and glyco-lignin attacking enzymes of five lignocellulose degrading fungi by ferulic acid. **World Journal of Microbiology and Biotechnology** 12 (1): 16 - 21.
- 8. ASIEGBU FO, DANIEL G & JOHANSSON M. 1996b.** Cellular Interaction between the saprotroph *Phlebiopsis gigantea* and non-suberized roots of *Picea abies*. **Mycological Research** 100(4): 409 - 417.
- 9. ASIEGBU FO, PATERSON A & SMITH JE 1996c.** The effects of co-fungal cultures and supplementation with carbohydrate adjuncts on lignin biodegradation and substrate digestibility. **World Journal of Microbiology and Biotechnology** 12: 273 - 279.
- 10. ASIEGBU FO, LÖNNEBORG A, & JOHANSSON M. 1996d.** Chitins and glucans detected in cell walls of the oomycetous fungus-*Pythium dimorphum*. **European Journal of Forest Pathology** 6: 315 - 321.
- 11. ASIEGBU FO, JOHANSSON M & DANIEL G. 1997.** Cytopathological response reactions of *Picea abies* roots to infection by the necrotroph- *Fusarium avenaceum* (Fr.) Sacc.) **Journal of Phytopathology** 145: 239 - 244.

- 12. DANIEL G, ASIEGBU FO & JOHANSSON M. 1998.** Saprophytic wood decaying capabilities of the S and P intersterility groups of *Heterobasidion annosum*. Mycological Research 102: 991 – 998.
- 13. JOHANSSON M, LUNDGREN L & ASIEGBU FO 1998.** Differential phenol-induced laccase activity of the S and P intersterility groups of the conifer root pathogen *Heterobasidion annosum*. Microbiological Research 153: 71 – 80.
- 14. JOHANSSON M, DENEKAMP M & ASIEGBU FO 1999.** Production and isozyme pattern of extracellular laccase in the S and P intersterility groups of the root pathogen *Heterobasidion annosum*. Mycological Research 103 (3): 365 – 371.
- 15. ASIEGBU FO, JOHANSSON M & STENLID J. 1999a.** Reactions of *Pinus sylvestris* (Scots pine) root tissues to the presence of mutualistic, saprotrophic and necrotrophic micro-organisms. Journal of Phytopathology 147: 257 – 264.
- 16. ASIEGBU FO, KACPRZAK, M. DANIEL, G. JOHANSSON M , STENLID J. & MANKA, M. 1999b.** Biochemical interactions of conifer seedling roots with *Fusarium spp* Canadian Journal of Microbiology 45: 923 - 935.
- 17. ASIEGBU FO 2000a.** Effects of ethanol, cell wall phenolics and carbohydrates on in vitro growth of necrotrophic fungi- *Heterobasidion annosum* and *Fusarium avenaceum*. Journal of Basic Microbiology 3: 139 - 148.
- 18. ASIEGBU FO 2000b.** Adhesion and development of the root rot fungus (*Heterobasidion annosum*) on conifer tissues: effects of spore and host surface constituents. FEMS Microbiology Ecology 33(2): 101 - 110.
- 19. KACPRZAK, M. ASIEGBU FO, DANIEL G & MANKA, M. 2000.** Changes in root structure of Scots pine seedlings infected with *Rhizoctonia solani* observed under fluorescence and electron microscopes. Phytopathologia polonica 19: 127 – 140.
- 20. ASIEGBU FO 2000.** Genetic transformation of the root rot fungus *Heterobasidion annosum* by particle bombardment. Forestry Studies 34; 9 - 16.
- 21. KACPRZAK, M. ASIEGBU FO, & MANKA, M. 2000.** Acidity and peroxidase activity change in Scots pine and Norway spruce seedling roots after infection with *Rhizoctonia solani* and *Fusarium spp*. SYLWAN 4: 99 –103.
- 22. KACPRZAK, M. ASIEGBU FO, & MANKA, M. 2000.** Cell wall lignification in roots of Scots pine, Norway spruce and European larch seedlings after infection with *Rhizoctonia solani* and *Fusarium spp*. SYLWAN 4: 105 – 112.
- 23. KACPRZAK M, ASIEGBU FO, DANIEL, G. JOHANSSON M , STENLID J. & MANKA, M. 2001.** Differential resistance of conifer species (European Larch, Norway spruce, Scots pine) to infection by necrotrophic parasites. European Journal of Plant Pathology 107 (2): 191 - 207.
- 24. NAHALKOVA J, ASIEGBU FO, DANIEL G, HRIB J, VOOKOVA B, PRIBULOVA, B & GEMEINER P. 2001.** Isolation and characterization of a *Pinus nigra* lectin (PNL) during interaction with the necrotrophs-*Heterobasidion annosum* and *Fusarium avanaceum*. Physiological and Molecular Plant Pathology 59: 153 - 163

- 25. JOHANSSON M, ASIEGBU FO & PRATT J. 2002.** Stump treatment against *Heterobasidion annosum* with urea: possible modes of action. *Forest Ecology and Management*-157 (1-3): 87 - 100.
- 26. KACPRZAK M, ASIEGBU FO, DANIEL G, MANKA M & STENLID J. 2002.** *In vitro* Scots pine seedling root colonization by damping-off fungi in the presence of a *Trichoderma harzianum* isolate. *Phytopathologia. polonica*. 23: 5 – 15.
- 27. ASIEGBU FO, CHOI W, LI G, NAHALKOVA J & DEAN RA. 2003.** Isolation of a novel antimicrobial peptide gene from *Pinus sylvestris*. *FEMS Microbiology Letters* 228: 27 – 31.
- 28. ASIEGBU FO, CHOI W, JEONG YS & DEAN RA. 2004a.** Cloning, sequencing and functional analyses of *Magnaporthe grisea* MVP1 gene, a *hex-1* homolog encoding putative voronin body protein. *FEMS Microbiology Letters* [230: 85 – 90](#).
- 29. ASIEGBU FO, ABU S, STENLID J & JOHANSSON M 2004b.** Molecular characterization of laccase genes of the conifer pathogen. *Mycological Research* 108: 136 - 148.
- 30. ABU SM, LI G & ASIEGBU FO 2004.** Identification of *Heterobasidion annosum* genes involve in conidiospore germination under varying culture conditions. *FEMS Microbiology Letters* 233: 205 – 213.
- 31. LI G & ASIEGBU FO 2004** Use of Scots pine seedling roots as an experimental model to investigate gene expression during interaction with the conifer pathogen *Heterobasidion annosum* (P-type). *Journal of Plant Research* 117 (2): 155 - 162
- 32. JOHANSSON SM, LUNDGREN LN & ASIEGBU FO 2004.** Initial reactions in sapwood of Norway spruce and Scots pine after wounding and infection by *Heterobasidion parviporum* and *H. annosum*. *Forest Pathology* 34 (3): 197 – 210.
- 33. LI G & ASIEGBU FO 2004.** Induction of *Pinus sylvestris* PsACRE,, a homolog of *Avr9/Cf-9* rapidly elicited defence related gene following infection with the root rot fungus *Heterobasidion annosum*. *Plant Science* 167: 535 - 540.
- 34. ASIEGBU FO, NAHALKOVA J & LI G. 2005a.** Pathogen inducible cDNAs from the interaction of the root rot fungus *Heterobasidion annosum* (P-type) with its conifer host (*Pinus sylvestris*). *Plant Science* 168: 365 – 372.
- 35. ASIEGBU FO & STENLID J. 2005.** Obituary: Martin Sten Johansson 1930 – 2004. *Forest Pathology* 34: 73 – 74.
- 36. ASIEGBU FO, ADOMAS A & STENLID J. 2005b.** Pathogen Profile: The root and butt rot fungus-*Heterobasidion annosum* *Molecular Plant Pathology* 6(4): 395 - 409.
- 37. STEPNIIEWSKA S, MANKA M, ASIEGBU FO 2006.** Anastomosis grouping, pathogenicity and population structure of *Rhizoctonia* spp. isolates from forest nurseries in Poland. *Forest Pathology* 36: 97 - 109.
- 38. ADOMAS A, EKLUND M, JOHANSSON M, ASIEGBU FO 2006.** Identification and analysis of differentially expressed cDNA's during non-self competitive interaction between *Phlebiopsis gigantea* and *Heterobasidion parviporum*. *FEMS Microbiology Ecology* 57: 26 – 39.
- 39. LI G, OSBORNE J & ASIEGBU FO 2006.** A macro-array expression analysis of novel cDNA's vital for growth initiation and primary metabolism during development of *Heterobasidion parviporum* conidiospores. *Environmental Microbiology* 8: 1340 – 1360.

- 40. ADOMAS A & ASIEGBU FO. 2007.** Analysis of organ specific responses of *Pinus sylvestris* to shoot (*Gremmeniella abietina*) and root (*Heterobasidion annosum*) pathogens. *Physiological and Molecular plant Pathology*, **69**. 140 - 152.
- 41. ADOMAS A, LI G, ADOMAS A, CRAIG D, CHU T, HELLER G, OLSON A, ZYL LV, WOLFINGER R, SEDEROFF R, DEAN RA, FINLAY R, STENLID J, ASIEGBU FO. 2007.** Transcriptome analyses of early events during interactions of Scots pine root tissues with pathogenic fungi. *Tree Physiology* 27, 1441–1458.
- 42. ADOMAS A, HELLER, G, LI G, CRAIG D, CHU T, OLSON A, ZYL LV, WOLFINGER R, SEDEROFF R, FINLAY R, STENLID J, & ASIEGBU FO. 2008.** Comparative analysis of transcript abundance in *Pinus sylvestris* roots after challenge with a saprotrophic, pathogenic or mutualistic fungus. *Tree Physiology* 28, 885-897.
- 43. HELLER, G, ADOMAS A, LI G, ADOMAS A, CRAIG D, CHU T, ZYL LV, WOLFINGER R, SEDEROFF R, FINLAY R, STENLID J, & ASIEGBU FO. 2008.** Transcriptional analysis of *Pinus sylvestris* roots challenged with the ectomycorrhizal fungus *Laccaria bicolor*. *BMC Plant Biology* **8**: 19 -
- 44. LUNDEN K, EKLUND M, FINLAY R, STENLID J, ASIEGBU FO 2008.** Heterologous array analysis in *Heterobasidion* spp. of cDNA arrays with probe from mycelium of S, P or F types. *Journal of Microbiology Methods* 75, 219 - 224.
- 45. LEHR N, ADOMAS A, ASIEGBU FO, AND HAMPP R TARKKA MT (2009) WS-5995 B,** an antifungal agent inducing differential gene expression in the conifer pathogen *Heterobasidion annosum*. *Applied Microbiology & Biotechnology* 85 (2), 347 – 358.
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