

CURRICULUM VITAE

Saber Miresmailli

Energy Biosciences Institute
Department of Entomology
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Current Positions

President & Chief Scientist Officer: ECOation Innovative Solutions Inc., Vancouver, BC 2010

ECOation Innovative Solutions Inc. is a consulting and contract R&D Company specializing in contract research & development in sustainability, renewable energy and safe agrochemicals. In collaboration with world-class scientists, policy makers and entrepreneurs, we design environmentally friendly platforms and products for our clients all over the world.

Scientific Advisory Panel Member: EcoSMART Technologies Inc., Alpharetta, GA 2010

The SAP is closely involved in the research and development of products, technology and patent strategy. The company is in contact with the SAP members on a regular basis with respect to ongoing research.

Postdoctoral Research Associate: Energy Biosciences Institute, UIUC, Urbana, IL 2010

Develop methods for ascertaining potential impact of insect herbivores on energy flow and biogeochemical cycling in biofuel feedstock production systems. Comparative assessments of biomass accumulation, photosynthesis and chemical ecology of biofuel crop plants in the presence and absence of insect herbivores.

Education

PhD (Plant Science), 2009, University of British Columbia, Vancouver, BC

MSc (Plant Science), 2006, University of British Columbia, Vancouver, BC

BSc (Plant Protection), 2000, University of Tehran, Tehran

Publications

- **Miresmailli, S.**, Isman M.B., Berenbaum, M.R. and DeLucia, E.H. 2010. Using VOC sensors in agricultural systems. In preparation
- **Miresmailli, S.**, Bradbury, R. and Isman M.B. 2010. Volatilization pattern of a botanical insect repellent from human skin. In preparation
- **Miresmailli, S.**, Bradbury, R. and Isman M.B. 2010. Effect of different surfaces on the volatilization pattern of botanical pesticides over time. In preparation.
- **Miresmailli, S.**, Gries, R., Gries, G., Zamar, R.H. and Isman, M.B. 2010. Population density and feeding duration of cabbage looper larvae on tomato plants alter levels of plant volatile emission. Submitted.
- Isman, M.B. and **Miresmailli**. 2010. Plant essential oils as repellents and deterrents to agricultural pests. *American Chemical Society*. In Press
- **Miresmailli, S.**, Gries, R., Gries, G., Zamar, R.H. and Isman, M.B. 2010. Herbivore-induced plant volatiles allow detection of *Trichoplusia ni* (Lepidoptera: Noctuidae) infestation on greenhouse tomato plants. *Pest Management Science*. In Press.
- **Miresmailli, S.**, Bradbury, R. and Isman, M.B. 2010. Qualitative assessment of an ultra-fast portable gas chromatograph (zNose™) for analyzing volatile organic chemicals in the laboratory and greenhouses. *Arthropod-Plant Interactions*. In Press

- Noshad, D., **Miresmailli, S.**, Riseman, A. and Ekramoddoullah, A. 2009. *In vitro* propagation of seven *Daphne* L. species. *Plant cell, tissue and organ culture*. 96: 201-209
- **Miresmailli, S.**, Bradbury, R. and Isman, M.B. 2006. Comparative toxicity of *Rosmarinus officinalis* L. essential oil and blends of its major constituents against *Tetranychus urticae* Koch (Acari: Tetranychidae) on two different host plants. *Pest Management Science* 62: 366-71
- **Miresmailli, S.** and Isman, M.B. 2006. Efficacy and persistence of rosemary oil as an acaricide against two-spotted spider mite on greenhouse tomato (Acari: Tetranychidae). *Journal of Economic Entomology* 99: 2015-2033

Book chapters

- Isman, M.B., **Miresmailli, S.** and Machial, C. 2010. Commercial opportunities for pesticides based on plant essential oils in agriculture, industry and consumer products. For *Phytochemistry Reviews*, special issue on " Natural Product-Based Pest and Disease Control Agents. In Press.
- **Miresmailli, S.**, Badulescu, D., Mahdavian, M., Zamar, R. H. and Isman, M.B. 2009. Integrating plant chemical ecology, sensors and artificial intelligence for accurate pest monitoring. In: Aube, E.D and Poole, F.H (Eds). *Tomatoes: Agricultural procedures, pathogen interaction and health effects*. Nova Science Publishers, NY. In Press.
- Isman, M.B., Machial, C.M., **Miresmailli, S.** and Bainard, L.D. 2007. Essential oil-based pesticides: new insights from old chemistry. In: H. Ohkawa, H. Miyagawa and P. Lee (Eds). *Pesticide Chemistry*, Wiley-VCH, Weinheim, Germany, pp. 201-209

Translation

- Berenbaum, M.R., *The Earwig's Tail*, a modern bestiary of multi-legged legends. Harvard University Press. Translated to Farsi by **Miresmailli, S.** In preparation.

Thesis

- Using induced herbivore plant volatiles and environmental factors for sensitive monitoring of pests infestation in greenhouse tomato crop. PhD. Thesis (2009), LFS, UBC.
- Assessing the efficacy and persistence of rosemary oil as a miticide/insecticide for use on greenhouse tomato. MSc. Thesis (2006), LFS, UBC.

Scholarships and Fellowships

- NSERC Industrial R&D Fellowship (IRDF), pre-approved until June 2011
- May L. Barnett Memorial Graduate Scholarship in Plant Science, LFS, UBC 2008-2009
- MITACS ACCELERATE internship in collaboration with EcoSafe Natural Products and EcoSMART Technologies Inc., 2009-2010 (two terms)
- NSERC Industrial Postgraduate Scholarship, 2006 – 2008

Awards and Honors

- Faculty of Graduate Studies, Student travel award, UBC, December 2008
- Entomological Society of America, Reno, NV, Student and Young Professional Participation Award, November 2008
- Entomological Society of America annual meeting, Reno, NV, President's prize for best oral paper, November 2008
- International Society of Chemical Ecology annual meeting, PSU, PA, Second place in student paper competition, August 2008
- International Society of Chemical Ecology- Student Travel Award, August 2008
- Faculty of Land and Food Systems Graduate Travel Award, July 2008
- Graduating Class of Agriculture 1921 - Academic Excellence and Leadership Award, June 2008, LFS, UBC
- Professional Pest Management Association of British Columbia annual meeting, Burnaby, BC, First prize in student paper competition, October 2006

Presentations

- Innovative governance for sustainable transitions to novel IPM and GM technologies: from authority to legitimacy. Dan Badulescu (Presenter), Murray B. Isman, Zhili Jiang and Saber Miresmailli. Pacific Branch, Entomological Society of America, March 2009
- Promise unfulfilled: commercial use of plant chemistry for pest management, Murray B. Isman, Dan Badulescu (Presenter) and Saber Miresmailli. Pacific Branch, Entomological Society of America, March 2009
- Intelligent pest monitoring; a new paradigm for crop protection. Entomological Society of America, Reno, Nevada, November 2008
- Intelligent pest monitoring, International Society of Chemical Ecology, PSU, PA, August 2008
- Efficacy and persistence of rosemary oil-based acaricide against two spotted spider mite on greenhouse tomato, Professional Pest Management Association of BC, October 2006
- Persia: older than history, PSGSS cultural talk series, Center for Plant Research, Faculty of Land and Food Systems, University of British Columbia, March 2005

Invited talks

- Intelligent Pest Monitoring, Brown bag lunch, Learning Center, LFS, UBC, November 2008
- Applied chemical ecology, five minutes of fame, Learning Center, LFS, UBC, October 2008
- Application of pattern recognition and modeling techniques in biology, Center for plant research, LFS, February 2008
- Integrating chemical ecology, artificial intelligence and sensory systems, Simon Fraser University, January 2008
- Intelligent scouting, Western forum of pest management, Penticton, BC, June 2008
- Intelligent pest scouting, BC greenhouse growers' association research day, Delta, BC, September 2007

Teaching experience

- Guest lecturer for LFS 100 Introduction to land, food and community, UBC 2009
- Course designer and supervisor AGRO 497B Directed study: applied chemical ecology, UBC 2008
- Teaching Assistant, AGRO 260 Agro-ecology I, FNH 250 Nutrition concepts and controversies, FNH 313, Microorganisms in food systems, BIOL 327, Introduction to Entomology, FNH 325, Food science laboratory I, UBC 2003-2009

Mentorship and Collaboration

Graduate Students:

- Paul Nabity (PhD), Collecting and analyzing herbivore induced plant volatiles and floral scents from tobacco plants, UIUC 2010
- Olivia Niziolek (MSc), Analyzing herbivore induced plant volatiles emitted from soybean plants under different CO₂ and temperature regimes, UIUC 2010

Undergraduate Students:

- Anelyse M. Weiler (BSc) UBC 2008
- David Farmer (BSc) UBC 2008
- Jenna Pfo (BSc) UBC 2008
- Juan Francesco Costaneda (BSc) UBC 2008
- Kate Menzies (BSc) UBC 2008- 2009
- Kiara Marie Antina Jack (BSc) UBC 2008
- Sylvia Altius (BSc) UBC 2006

Positions held

- Webmaster, UBC Graduate Student Society, Vancouver, BC, 2005-2006
- Database Designer, SUND University, Tehran, Iran, 2001-2003
- Research Assistant, Agricultural Biotechnology Research Institute of Iran, Karaj, Iran, 2000-2001
- Greenhouse Assistant, University of Tehran, Iran, 1997-2000

Professional service

- Reviewing scientific articles for Biocontrol Science and Technology, Pest Management Science, Annals of Applied Biology, Journal of Agricultural Science and Technology
- Member of graduate council, house finance, oversight, academic and publication committees, Graduate Student Society, UBC, 2006-2007
- Vice president & Webmaster, Plant Science Graduate Student Society, LFS, UBC, 2004-2007

Membership in professional societies

International Society of Chemical Ecology, Society for Plant Signaling and Behavior, Entomological Society of America, Entomological Society of Canada, Professional Pest Management Association of British Columbia, Union of Concern Scientists, The Association of Applied Biologists

Certifications

Certificate in “Entrepreneurship and Management”, University of Illinois, College of Business and Institute for Genomic Biology (Graduation 2011)
GCMS advanced user certificate, Shimadzu, Maryland
Certified operator of the ultra-fast gas chromatography instrument (zNose), Electronic Sensor Technology, CA
Certified Problem-based learning facilitator
Certified Problem-based learning case writer

My Research In The News

- Jeff Hale, The Globe and Mail, Projects at universities across the country. April 21, 2008
- Greenhouse Canada, Ultra-sensitive pest monitoring. February 2008
- Margaret Evans, The Chilliwack Progress, Secret defence mechanisms of plants. January 22, 2008
- Ambassade de France au Canada, Bulletins-Electroniques, A l'écoute (chimique) des plantes pour prévenir les infestations, November 21, 2007
- The Epoch Times, 卑詩省大學的研究人員發現植物可以用自己的「語言」和外界溝通，通過學習掌握植物「語言」可以用於防治病蟲害。 , October 27, 2007
- MehrNews, ساخت حسگر محافظ گیاهان در برابر آفات توسط محقق ایرانی بریتیش کلمبیا, October 1, 2007
- Sing Tao, Canada-China View, 內容]本報記者報道卑詩大學（UBC）的研究員，希望研究一種可以測知植物遭遇害蟲侵襲的預警系統, September 12, 2007
- Chad Skelton, The Vancouver Sun, When plants cry for help, UBC prof listens. September 8, 2007
- CanWest News Service, National Post, UBC researcher hopes to hear plants' cries for help, September 8, 2007
- Edmonton Journal, Distressed plants issue 'cry for help' researcher says. September 8, 2007
- The StarPhoenix, Researcher hopes to hear vegetation's cries for help. September 8, 2007
- Times Colonist, Researcher hopes to sniff distress call from plants. September 8, 2007
- Lorraine Chan, UBC Report, Help Me! Plant sensor could tell when your tomatoes are singing the blues. September 6, 2007
- Joyce Lam, The Delta Optimist, Plants telling people when pests are present. August 18, 2007

Research skills

Insect and mite rearing, toxicity bioassays, analytical chemistry, plant volatile collection and analysis, statistical analysis and modeling, designing and building scientific instruments: Electronic Micro-Sprayer for pesticide application and bioassays (2005), Plant volatile collection system (2006), Field VOC collection system (2010)

Computer skills

DOS, Microsoft Windows, Mac OS, Microsoft office, Microsoft Picture it, Adobe Illustrator CS4, Keynote, Photo Impact Pro, SPSS, JMP, Sigma Plot, Database and website designing, Graphic design and presentations, Professional micro and macro photography and photo editing.

Languages skills

Fluent in English and Farsi, good knowledge of French

References

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