

# ILHAMI YILDIZ

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California Polytechnic State University  
BioResource and Agricultural Engineering  
San Luis Obispo, CA 93407

## EDUCATION

**Ph.D. (Food, Agricultural & Biological Engineering)**, September 1993, The Ohio State University, Columbus, OH, U.S.A.

**M.S. (Mechanical Engineering)**, March 1993, The Ohio State University, Columbus, OH

**M.S. (Agr. Meteorology)**, December 1987, The Ohio State University, Columbus, OH

**M.S. (Agricultural Engineering)**, July 1985, University of Ankara, Ankara, Turkey

**B.S. (Agricultural Engineering)**, June 1983, University of Ankara, Turkey

## Language Skills

English and Turkish

## WORK EXPERIENCE

**Associate Professor**, California Polytechnic State University, BioResource and Agricultural Engineering Department, San Luis Obispo, CA, January 2007 – Present

**Assistant Professor**, University of Windsor, Department of Earth and Environmental Sciences, Windsor, Ontario, Canada. July 2004 – December 2006

**Heating Systems Manager**, DeCloet Greenhouse Manufacturing Ltd., Simcoe, Ontario, February 2002 – June 2004

**Associate Professor**, Adnan Menderes University, Department of Agricultural Structures and Irrigation, Aydin, Turkey. November 1998 – May 2001

**Undergraduate Program Coordinator**, Adnan Menderes University, Engineering Programs, Aydin, Turkey. September 1998 - January 2001

**Founding Director**, Adnan Menderes University, Geothermal Energy Research and Application Center, Aydin, Turkey. March 1997 - April 2000

**Founding Member and Reporter**, Adnan Menderes University, Council of Research Planning and Co-ordination, Aydin, Turkey. August 1996 - January 2001

**Visiting Scholar**, Cornell University, Department of Agricultural and Biological Engineering, Ithaca, NY, August 1997 - November 1997

**Assistant Professor**, Adnan Menderes University, Department of Agricultural Structures and Irrigation, Aydin, Turkey. June 1996 – November 1998

**Mechanical (HVAC Application) Engineer**, GAMA Ind., Inc. Ankara, Turkey. Gazprom Complex of Buildings Project, Moscow, Russia. May 1995 - May 1996

**Research Engineer**, State Meteorological Service, Ankara, Turkey. Nov. 1993 – May 1995

**Research Associate**, The Ohio State University, Department of Mechanical Engineering, Columbus, OH. January 1992 - September 1993

**Research Associate**, The Ohio State University, Department of Food, Agricultural and Biological Engineering. Columbus, OH, Winter 1991 – January 1992

**Community Aide**, The Ohio State University, Student Housing Complex, Columbus, OH, Summer 1991 - Summer 1992

**Research Associate**, The Ohio State University, Department of Food, Agricultural and Biological Engineering, Columbus, OH, Summer 1990

**Computer Programmer and Data Analyst**, The Ohio State University, Department of Food, Agricultural and Biological Engineering, Columbus, OH, Winter and Spring 1990

**Teaching and Research Associate**, University of Ankara, Institute of Applied Sciences. Fall 1983 - Summer 1985

### **COURSES TAUGHT AT CAL POLY**

**BRAE 448 Bioconversion:** Undergraduate Course, Cal Poly, San Luis Obispo, California

**BRAE 348 Energy for a Sustainable Society:** Undergraduate Course, Cal Poly, San Luis Obispo, California

**BRAE 232 Agricultural Structures Planning:** Undergraduate Course, Cal Poly, San Luis Obispo, California

### **STUDENT PROJECTS/RESEARCH SUPERVISED**

**Project Director**, Multi-Institutional Research Project (USDA, ARI, BKS Energy LLC, Energy Alternative Solutions, Inc.) – *Development and optimization of microalgae cultivation in photobioreactors*. Cal Poly, Spring 2008 – Present

**Project Director**, State Faculty Project – *Simulated performance of Watery greenhouse in semi-arid central California*. Cal Poly, 2008

**Project Director**, Honors Research – *Simulated effects of reflective mulch on energy and water conservation in open and closed greenhouse systems in semi-arid regions*. Cal Poly, 2008

**Supervisor**, M.S. Thesis – *Microalgae growth in Photobioreactors*. T. Mehlitz, Cal Poly, Fall 2007 – Winter 2009

**Supervisor**, Senior Project – *Design, construction, and evaluation of a small-scale anaerobic manure digester and biogas generation system*. M. James, Cal Poly, Spring 2008-Present

**Supervisor**, Senior Project – *Design, construction, and evaluation of a multi-layered solar distillation prototype*. Cal Poly, Spring 2008-Present

**Supervisor**, Senior Project – *Design and manufacturing a wetsuit dryer*. D. Tartaglia, Cal Poly, Present

**Supervisor**, Senior Project – *Simulated effects of dynamic row spacing on energy and water conservation in semi-arid central California greenhouses*. A. Moya, Cal Poly, 2008

**Supervisor**, Internship Students – *Microalgae growth in Photobioreactors*. B. Broker (Gen. Engineering Major) and Diana Durany (Architectural Engineering Major), J. Karamanlis (Env. Management & Protection Major) Cal Poly, Summer 2008 – Present

**Supervisor**, 4 Undergraduate Students/term (BRAE 128), *Term Design Project*, BioResource & Agricultural Engineering Department, Cal Poly, CA, Fall 2007, Fall & Winter 2008

**Project Director**, *Simulated performance of a renewable energy technology-Heat pump systems in semi-arid California greenhouses*. Honors Research, C. Hardin, Cal Poly, 2007

**Technical Advisor**, Senior Project – *An investigation of viability of biodiesel use in Cal Poly agriculture*, Greg Reynolds, Industrial Technology, Orfalea College of Business, Cal Poly, California, Winter 2007

**Supervisor**, Undergraduate Honours Thesis – *Effect of mulching on soil temperature, moisture, and corn yield in Ontario*, Kyle Prestanski, Earth and Environmental Sciences, University of Windsor, Ontario, Canada, Summer 2006 – Winter 2007

**Supervisor**, VIP (Voluntary Internship Program) Student – *Micrometeorological instrumentation setup and measurements in a corn field in Ontario*, Terry Columbe, University of Windsor, Ontario, Canada, Summer 2006

**Supervisor**, VIP (Voluntary Internship Program) Student – *Micrometeorological instrumentation setup and measurements*, Jason Chang, University of Windsor, Ontario, Canada, Spring 2005

**External Examiner**, Ph.D. Dissertation – *Learning to Engineer Life: Development of a generally configurable model for the simulation of artificial ecosystems*, Lael Parrott, McGill University, Faculty of Graduate Studies and Research, Department of Agricultural and Biosystems Engineering, Montreal, PQ, Canada, 2000

**Committee Member and Examiner**, M.S. Thesis – *Effects of different irrigation systems and irrigation levels on water-yield relations of processing tomatoes*, Talih Gurbuz, Adnan Menderes University, Graduate School, Aydin, Turkey, 2000

**Supervisor**, M.S. Thesis - *TURKLIM: Engineering weather data for Turkey*, Ercan Yesilirmak, Adnan Menderes University, Graduate School, Aydin, Turkey, 1999

## **MEMBERSHIPS and ACTIVITIES**

*Goal Action Team Member*, USDA REE Energy Science Plan for Research, Education, and Extension. Goal IV: Workforce Development for the Bioeconomy. Nov. 2008 – Present

*Member of the Editorial Board*, International Journal of Earth and Environmental Sciences (IJEES), February 2007 – Present

*Member of the Editorial Board*, Proceedings of the International Workshop on Greenhouse Environmental Control and Crop Production in Semi-Arid Regions. Acta Horticulturae Number 797. September 2008 ISSN: 0567-7572. ISBN: 978 90 6605 581 0

*Scientific Committee Member*, ISHS International Workshop on Greenhouse Environmental Control and Crop Production in Semi-Arid Regions, Tucson, AZ, October 20-24, 2008

*Member of the Merit Review Panel*, USDA/DOE Biomass Research and Development Solicitation Merit Review Panel Meeting, Denver, Colorado, January 8-10, 2008

*Controlled Environment Agriculture & Energy Working Group*. Cal Poly, San Luis Obispo, CA, Fall 2007 (Founding Member & Group Leader)

*SURGE* (Sustainable Research Group for the Environment), Cal Poly, San Luis Obispo, CA

*American Society of Agricultural and Biological Engineers, Canadian Society of Bioengineers, Canadian Society of Agricultural and Forest Meteorology, International Society for Horticultural Science, Turkish Society of Agricultural Engineers*

*USDA-NCERA-101 Committee on Controlled Environment Technology and Use*

*American Society of Heating, Refrigerating and Air-Conditioning Engineers*, Student Chapter, The Ohio State University, Columbus, OH, **President**, 1990-1993  
*Turkish Students' Association of The Ohio State University*, Columbus, OH, **Auditor**, 1989 – 1990; **President**, 1988 - 1989

#### **FELLOWSHIPS, HONORS and AWARDS**

**Outstanding Faculty Award** (2008), AXA, Cal Poly, San Luis Obispo, CA

**Letter of Appreciation** (2008), President, Cal Poly, San Luis Obispo, CA. In recognition of BioEnergy Initiative at Cal Poly

**Bioenergy - The Grand Challenge Award** (2008), Awarded for Promoting Forward –Thinking and Leadership in Land Grant Colleges and Other Institutions of Learning. USDA, Washington, D.C., U.S.A.

**Gold Medal Performance** (2004), University of Windsor, Windsor, Ontario, Canada. In recognition of friendly, outgoing personality and contributions to creating a positive work environment. Named Mr. Congeniality

**Post-Doctoral Fellowship** (1999), Government of Poland. The Use of Thermal Effluents in Agriculture

**Post-Doctoral Fellowship** (1997), Organization for Economic Co-operation and Development (OECD). Co-operative Research Programme: Biological Resource Management for Sustainable Agricultural Systems. Cornell University, Ithaca, NY

**Post-Graduate Scholarship** (1997), International Center for Advanced Mediterranean Agronomic Studies, Mediterranean Agronomic Institute of Chania, Greece

**Grant-In-Aid Award** (1991-92), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), Atlanta, GA, U.S.A., 5-6 awards each year

**University Fellowship** (1989-90), The Ohio State University, Columbus, OH

**Fellowship** (1985-90), Ministry of Education, Ankara, Turkey

**Fellowship** (1984-1985), Scientific and Technical Research Council of Turkey (TUBITAK), Ankara, Turkey

#### **GRANTS APPLIED/RECEIVED**

**USDA, CSREES Multicultural Scholars Program** (2008), “Learn-by-Doing” in the Multicultural Scholars Program at Cal Poly; from Bioenergy, Specialty Crops to Human Nutrition and Obesity. Cal Poly. \$216,000. Pending

**Cal Poly**, BRAE College-Based Fee Funding Grant, San Luis Obispo, CA (Winter 2009), Algae to biofuels processing in a photobioreactor system. \$15,000

**ONR (The U.S. Navy and Marine Corps, Office of Naval Research)-C3RP** (2008) Seawater/Wastewater Production of Microalgae-based Biofuels in Closed-loop Tubular Photobioreactors and Microalgae Production in a Vertical Photobioreactor. \$126,070

**USDA, CSU ARI, BKS Energy, and Energy Alternative Solutions, Inc.** (2008), Development and optimization of microalgae cultivation in photobioreactors. Cal Poly. \$396,138

**Cal Poly**, Honors Program, (2008). Simulated Effects of Reflective Mulch on Energy and Water Conservation in Open and Closed Greenhouse Systems in Semi-Arid Regions. \$4,000

**Cal Poly**, Instructional Enhancement Grant, San Luis Obispo, CA (Fall 2007), Instructional Enhancement for BRAE 348: Energy for a Sustainable Society. \$1,000

**Cal Poly**, State Faculty Support Grant Award, San Luis Obispo, CA (2007). Preliminary Study of Watergy Greenhouse - California. \$5,000

**Cal Poly**, University Honors Program, San Luis Obispo, CA (2007). Heat Pumps in California Greenhouses. \$5,000

**University of Windsor**, Ontario, Canada (2006). Travel Grant – International Symposium on Greenhouse Cooling, Almeria, Spain. \$1,250 CDN

**University of Windsor**, Ontario, Canada (2005). Establishing Climatology Teaching Lab., Phase-I. \$25,000 CDN

**University of Windsor**, Ontario, Canada (2005 - 2006). \$5,000 CDN/yr, for 2 years

**University of Windsor**, Ontario, Canada (2004), Start-up Funding. \$2,000 CDN

**ISTS, CanAdapt, NRC – IRAP, Industry, Union Gas, and Enbridge Gas** (2003), System Design for Improved Energy and Water Use Efficiency, and Reduced Greenhouse Gas Emissions for Commercial Greenhouse Applications. DeCloet Greenhouse Mfg. Ltd. R & D Greenhouse Complex, Delhi, ON, Canada. 2 million CDN

**Adnan Menderes University Research Foundation**, Aydin, Turkey (1997), TURKLIM: Engineering Weather Data for Turkey. \$5,000 USD

**State Planning Organization**, Ankara, Turkey (1997-2001), Use of Renewable and Local Energy Resources (Geothermal) in Greenhouse Heating. \$15,000 USD

**Aydin Municipality and AYSERA Co-op.**, Aydin, Turkey (1997-1998), Development of Geothermally Heated Organized Organic Greenhouse Regions. \$50,000 USD

**Southern California Gas Company**, OSU, Columbus, OH (1992-1993), A performance study of a gas fired heat pump system. \$25,000

**Ohio Supercomputer Center**, OSU, Columbus, OH (1990-1993), Simulation of Greenhouse Microclimates and Control Strategies. \$70,000

## SERVICE

**Goal Action Team Member**, USDA REE Energy Science Plan for Research, Education, and Extension. Goal IV: Workforce Development for the Bioeconomy. Nov. 2008 – Present

**Member of the Editorial Board**, International Journal of Earth and Environmental Sciences (IJEES), Atlantic Press, February 2007 – Present

**Member of the Merit Review Panel**, *USDA/DOE Biomass Research and Development Solicitation Merit Review Panel Meeting*, Denver, Colorado, January 8-10, 2008

**Scientific Committee Member**, *ISHS International Workshop on Greenhouse Environmental Control and Crop Production in Semi-Arid Regions*, Tucson, AZ, October 20-24, 2008

**Member of BRAE Department Committees**, *Various Committees*, Cal Poly, San Luis Obispo, California, 2007 – Present

**Manuscript Reviewer**, peer-reviewed, *Acta Horticulturae*, Official Journal of the ISHS, Leuven, Belgium, Present

**Manuscript Reviewer**, peer-reviewed *Journal of Theoretical and Applied Climatology*, Springer Wien, Austria, January 2008 – Present

**Manuscript Reviewer**, peer-reviewed *Biosystems Engineering*, Official Journal of the Institution of Agricultural Engineers, Elsevier B.V., Amsterdam, The Netherlands, November 2007 – Present

**Grant Proposal Reviewer**, Ontario Centres of Excellence, The Centre for Earth and Environmental Technologies – Resource Management and Sustainable Agriculture, Toronto, Ontario, Canada, September 2005 – Present

**Manuscript Reviewer**, peer-reviewed *Transactions of the ASAE*, Structures and Environment Division. 2950 Niles Road, St. Joseph, MI 49085, November 2004 – Present

**Manuscript Reviewer**, peer-reviewed *Applied Engineering in Agriculture*, Structures and Environment Division. 2950 Niles Road, St. Joseph, MI 49085. November 2004 – Present

**Manuscript Reviewer**, peer-reviewed *Turkish Journal of Agriculture and Forestry*, Scientific and Technical Research Council of Turkey (TUBITAK), January 1994 – Present

**Grant Proposal Reviewer**, Scientific and Technical Research Council of Turkey (TUBITAK), Ankara, Turkey, January 1994 – Present

**Textbook Reviewer**, Principles of Weather, Oxford University Press – Canada, Fall 2006

### SELECTED PEER-REVIEWED PUBLICATIONS

- Moya, A., Mehlitz, T., **Yildiz, I.**, Kelly, S. F., and Hardin, C., (2008). *Simulated effects of dynamic row spacing on energy and water conservation in semi-arid central California greenhouses*. Acta Hort. 797: 307-313
- Mehlitz, T., **Yildiz, I.**, Hardin, C., and Rahman, S. (2008). *Simulated effects of reflective mulch on energy and water conservation in semi-arid central California greenhouses*. Acta Hort. 797: 353-359
- Hardin, C., Mehlitz, T., **Yildiz, I.**, and Kelly, S. F. (2008). *Simulated performance of a renewable energy technology - Heat pump systems in semi-arid central California greenhouses*. Acta Hort. 797: 347-352
- Diaz, G., Kelly, S. F. and **Yildiz, I.** (2008). *Design and evaluation of a greenhouse interface for climate control programming and networking*. Acta Hort. 797: 163-166
- Yildiz, I.** and Stombaugh, D.P. (2008). *Simulated effects of various environmental management practices on energy consumption in open and confined greenhouse systems*. Acta Hort. 801: 1317-1324
- Yildiz, I.** and Stombaugh, D.P. (2008). *Simulated effects of various environmental management practices on water consumption in open and confined greenhouse systems*. Acta Hort. 801: 1041-1048
- Yildiz, I.**, and B. Sosaoglu (2007). *Spatial distributions of heating, cooling, and industrial degree-days in Turkey*. Theoretical and Applied Climatology, Vol. 90, No. 3-4, 249-261. ISSN: 0177-798X (Print) 1434-4483 (Online). Springer Wien
- Yildiz, I.** and Stombaugh, D.P. (2006). *Heat pump cooling and greenhouse microclimates in open and confined greenhouse systems*. Acta Hort. 719:255-262
- Yildiz, I.** and Stombaugh, D.P. (2006). *Dynamic modeling of microclimate and environmental control strategies in a greenhouse coupled with a heat pump system*. Acta Hort. 718:331-340
- Yildiz, I.** and Stombaugh, D.P. (2006). *Simulated performances of a heat pump system for energy and water conservation in open and confined greenhouse systems*. Acta Hort. 718:341-350