

## DR. EVA ALMENAR

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### EDUCATION

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- **Ph.D. in Food Science and Technology**, Institute of Agrochemistry and Food Technology (IATA-CSIC) (Packaging Laboratory) and University of Valencia, Valencia, Spain (2005).
- **Diploma in Packaging Science and Technology**, Packaging, Transport and Logistics Research Institute (ITENE), Valencia, Spain (2000).
- **Certificate in Advanced Studies in Food Science and Technology**, University of Valencia, Spain (2000).
- **B.S. in Food Science and Technology**, University of Valencia, Valencia, Spain (1999).
- **B.S. in Biology (Biochemistry)**, University of Valencia, Valencia, Spain (1997).

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### PROFESSIONAL EXPERIENCE

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- **Associate Professor**, School of Packaging, Michigan State University, MI, USA (Aug/15-Present).
- **Assistant Professor**, School of Packaging, Michigan State University, MI, USA (Aug/08-Jul/15).
- **Visiting Research Associate**, School of Packaging, Michigan State University, MI, USA (Oct/07-Aug/08).
- **Postdoctoral Research Associate**, School of Packaging, Michigan State University, MI, USA (Oct/05-Sep/07).
- **Teaching Assistant**, Universidad Politécnica de Valencia, Valencia, Spain (2004-05).
- **Intern**, DANNON, S.A., Valencia, Spain (1998-99).
- **Undergraduate Assistant**, Dept. of Genetics, University of Valencia, Valencia, Spain (1997-98).

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### AWARDS, NOMINATIONS, AND HONORS

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- Session chair at the IV International Conference on Fresh-cut Produce, Taian, Shandong, China. (August/19).
- “Outstanding Volunteer Award” winner, Food Packaging Division of the Institute of Food Technologists (IFT) (June/19).
- “IFT19 Division Leader Travel Award” winner, Institute of Food Technologists (IFT) (April/19).
- “Outstanding Faculty Award” winner, Michigan State University Senior Class Council (March/2019).
- Plaque of appreciation for presentation at BakingTech 2018 (February/18).
- Invited by the Rockefeller foundation to attend a convening on “Transformational Innovations to Extend Shelf Life & Reduce Post-Harvest Food Loss” held in Bellagio (Italy) (April /17).

- Featured Institute of Food Technologists (IFT) member for the 2017 March issue of Food Technology magazine (<http://www.ift.org/Food-Technology/Face-to-Face/meet-eva-almenar.aspx>)
- Award in gratitude of service as 2015-2016 IFT division chair (July/16).
- Mentor of the Award Winner in the poster category of Environmental Science & Natural Resources-Section 1 for the 2016 University Undergraduate Research and Art Forum (UURAF) at MSU (April/16).
- Mentor of the Grand Prize Award Winners for the Science and Engineering Division of the 2011 University Undergraduate Research and Art Forum (UURAF) at MSU (July/11).
- Mentor of the Award Winners in the oral category of Health, Food, and Wellness for the 2011 University Undergraduate Research and Art Forum (UURAF) at MSU (April/11).
- “Outstanding Faculty Award” nomination, Michigan State University Senior Class Council (Feb/11).
- Purdue pre-tenure fellowship (Aug/10).
- Foundation Alfonso Martin Escudero post-doctoral fellowship (Oct/05-Sep/07).
- Spanish Ministry of Science and Technology AGL scholarship (Research Project AGL 2003-07326-C02-01) (Jul/04-May/05).
- Spanish Ministry of Science and Technology travel fellowship (Jun-Aug/03).
- Spanish Ministry of Science and Technology travel fellowship (Jul-Sep/02).
- Spanish Ministry of Science and Technology FPI scholarship (Research Project ALI 1999-0901) (Jul/00-Jun/04).

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## **PROFESSIONAL ASSIGNMENTS**

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- Member of MSU research delegation invited to Somaiya Vidyavihar (SVV) University for MSU-SVV partnership (May/19).
- Journal of Food Protection editorial board (2019-2021).
- Organizer and moderator of the 2018 IFT Food Packaging Symposium: “How e-commerce is changing the food packaging landscape” (July/18).
- Past-chair (2018-2015), chair (2015-2013), vice-chair (2013-2012), and secretary (2012-2011) of the NIFA-USDA Multistate Research Project S-294: Postharvest quality and safety of fresh-cut vegetables and fruits.
- Past-chair (2017-2016), co-chair (2016-2015), and chair-elect (2015-2014) of the Food Packaging Division of the Institute of Food Technologists (IFT).
- Co-moderator at the hot-topic symposium: “Farming in the future” of the 2017 Institute of Food Technologists (IFT) annual meeting (June/17).
- Co-organizer and co-moderator of the 2016 IFT Food Packaging Symposium: “Maximizing freshness and reducing waste of packaged food using shelf-life simulations: basic principles and case studies” (July/16).
- Co-organizer and co-moderator of the 2015 IFT Food Packaging Symposium: “Packaging materials to enhance food quality and safety: methods, approaches and case studies” (July/15).

- Judge for the food packaging poster competition at several IFT Annual Meetings (June/14; July/15; July/16; June/17; July/18).
  - Certificate of appreciation for valuable contribution in the peer review of manuscripts from ACS publications (December/11).
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## **TEACHING**

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I have developed classroom and laboratory teaching materials for graduate and undergraduate students, large and small groups, on campus and on line classes, on varied topics. In addition to academic courses, I have developed teaching materials for basic trainings and certificate programs on varied topics including packaging materials, packaging technologies, and adequate storage/packaging for fresh products like apples and blueberries.

## **TEACHING MATERIAL DEVELOPMENT**

### **COURSES**

#### **New courses:**

- PKG 491-730 (fall semesters from 2010 to 2017)/PKG 456 (fall semesters from 2018 to present): Packaging and shelf life of perishables (undergraduate/graduate course).
- PKG 891-732: Packaging and distribution of the perishable product (graduate course, co-developed).

#### **Course revisions:**

- PKG 323: Plastics Packaging (undergraduate course). Revision of course content and development of 4 laboratories and a teaching assistant training outline.
- PKG 455: Food Packaging (undergraduate and graduate course). Revision of course content and development of 5 laboratories.

### **OUTREACH PROGRAMS: BASIC TRAININGS AND SHORT COURSES**

- "Conventional and advanced packaging technologies to extend food shelf life". VIPP (Short course; July 25, 2018).
- "Materials in food packaging". VIPP (Short course; July 24, 2018).
- "Food packaging basics for the U.S. Army Natick Soldier System Center" (Off-campus short course; February 6-7, 2017).
- "Case studies". Food Packaging Basics (Short course: November 13, 2018).
- "Packaging trends". Food Packaging Basics (Short course; November 16, 2016; November 15, 2017; November 13, 2018).
- "Advanced packaging". Food Packaging Basics (Short course; November 16, 2016; November 15, 2017; November 13, 2018).
- "Conventional packaging". Food Packaging Basics (Short course; November 15, 2016; November 15, 2017; November 13, 2018).
- "Materials in food packaging". Food Packaging Basics (Short course; November 15, 2016; November 14, 2017; November 13, 2018).
- "Introduction". Food Packaging Basics (Short course; November 15, 2016; November 14, 2017; November 13, 2018).

- “Global food safety and packaging”. International Food Safety short course (Short course: July 19, 2015; July 21, 2016; July 18, 2017; July 27, 2018; July 30, 2019).
- “Modified atmosphere packaging”. Food Packaging Basics (Short course; October 25, 2013; October 22, 2014; November 11, 2015).
- “New packaging approaches with impact on in-package gas compositions”. 2012 American Society for Horticultural Science Annual Conference (Workshop; August 3, 2012).
- “Smart packaging techniques for shelf life enhancement and retention of bioactive compounds”. Sponsored by National Agricultural Innovation Project (NAIP), Indian Council of Agricultural Research (ICAR) (Basic Training; October 17-21, 2011).
- “Extensión de la vida útil de los arándanos mediante el uso de envases”. Buenas Prácticas Agrícolas (GAP) para la Producción de Arándanos (Blueberries). Food Safety Risk Management Tools for Spanish-Speaking Audiences (Certificate Program; June 23, 2011).
- “Introduction to Fresh Product Packaging: Materials, Properties and Types”. Introduction to Food Preservation and Safety for Masco Corporation – Research and Development Personnel (Workshop; June 16, 2011).
- “Materials II: Plastics in Packaging”. Principles of packaging for industry newcomers (Short course; September 14, 2010)
- “Adequate Storage and Packaging Technologies for Apples”. GAP for Food Safety preparedness for 3rd party audits in apple production (Certificate Program; April 26, 2010).
- “Postharvest Physiological Disorders and Diseases of Apples”. GAP for Food Safety preparedness for 3rd party audits in apple production (Certificate Program; March 22, 2010).
- “Postharvest Blueberry Shelf life Extension using Packaging Technologies”. Risk Management Tools for Food Safety; Good Agricultural Practices (GAP) for Blueberry Production (Certificate Program: March 27, 2009; February 26, 2010; March 4, 2011; May 27, 2011).

**COURSES TAUGHT (ON CAMPUS AND ONLINE)**

- PKG 499: Undergraduate research (on-campus undergraduate course) (SS19).
- PKG 455: Food packaging (on-campus undergraduate/graduate course) (SS13; SS14; SS15; SS16; SS17; SS18; SS19).
- PKG 456: Packaging and shelf life of perishable food (online undergraduate/graduate course) (FS18; FS19).
- PKG 491-730: Packaging and shelf life of perishables (online undergraduate/graduate course) (FS10, FS11, FS12, FS13, FS14; FS15; FS17).
- PKG 323: Plastics packaging (on-campus undergraduate course) (SS08, FS08, SS09, FS09, SS10, FS10, SS12, FS12, FS13, FS14; FS15).
- PKG 490: Directed studies in packaging (on-campus undergraduate course) (SS09, SS11, FS13; SS15; SS16).
- PKG 890: Independent study in packaging (on-campus graduate course) (SS10, SS11; SS16).
- PKG 891-732: Packaging and distribution of the perishable product (online graduate course) (FS09).

**GUEST LECTURER**

- PKG 101: Principles of packaging (undergraduate course) (SS18).
- PKG 102: Introductory Packaging Seminar (undergraduate course) (SS17).
- PKG 485: Packaging Development (undergraduate course) (SS15, SS16; SS17; FS17; SS18; FS18; SS19; FS19).
- FSC 470: Food Product Development (undergraduate course) (SS13; SS14; SS15; SS16; SS17; SS18; SS19).
- HNF 406: Sociocultural Aspects of Food (undergraduate course) (SS13).
- HB 489: Hospitality Business (undergraduate course) (SS19).

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## **RESEARCH**

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### **RESEARCH AREAS OF INTEREST**

- My main research interest is in the field of fresh produce packaging with a current focus on the development of packaging materials made from renewable feedstock containing or not active compounds (antimicrobial, scavenge, and temperature-sensitivity materials).

### **EXPERTISE**

- Handling and packaging of whole and fresh-cut products in the global market.
- Development and validation of packaging alternatives/concepts for new markets for food products.
- Extension of the shelf life of food products. Studies of physicochemical, microbiological and sensorial changes caused by product/package interactions.
- Modified atmosphere packaging. Continuous and microperforated films. Bio-based and petroleum-based plastics.
- Active packaging. Antimicrobial and ethylene and water adsorbing agents. Encapsulation materials.
- Development of packaging materials from renewable feedstock for the delivery of high-quality and safe food products. Formulation, processing, characterization, and validation.
- Use of agricultural waste for development of more sustainable packaging materials.

### **RESEARCH TEAM**

**CURRENT AS ADVISOR:** Major advisor: 3 M.S. students. External advisor: 1 M.S. student. Committee member: 3 Ph.D. students.

**COMPLETED AS ADVISOR:** Major advisor: 13 M.S. students, 10 research associates, 16 visiting scholars, 62 undergraduate students, and 1 high school student. Committee member: 8 M.S. students and 3 Ph.D. students.

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## **PUBLICATIONS**

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### **INVENTION DISCLOSURES**

- Almenar, E.; Adzaly, Z.; Villalobos-Carvajal, R.; Kang, I. Development of a novel sausage casing made of chitosan (Invention disclosure number: TEC 2014-0070 (02/03/14)).

- Almenar, E.; Koutsimanis, G.; Harte, J. Development of a biodegradable film for fresh produce packaging with the capability to adjust the gas exchange rate to temperature changes (Invention disclosure number: TEC 2013-0082 (01/25/13)).
- Almenar, E.; Lee J.; Beaudry, R.; Harte, B.; Ryser, E.; Harte, J; Siddiq, M. Collagen as feedstock to create bio-based films for rapid release and controlled delivery of physiologically bioactive molecules to enhance quality, safety, and nutritional value of minimally processed fresh produce and of other food products (Invention disclosure number: TEC 2011-0068 (02/22/11)).
- Almenar, E.; Marks, B.; Jeong, S.; Ryser, E.; Benyathiar, P. Low-energy X-ray (1<MeV) to irradiate poly(lactic acid), PLA, and other polymers without compromising the material integrity. (Invention disclosure number: TEC2010-0079).
- Almenar, E.; Auras, R.; Samsudin, H.; Harte, B.; Rubino, M.; Harte, J. Microperforated poly(lactic acid) packaging systems and method of preparation thereof. (Invention disclosure number: TEC 2009-0023 XPT; U.S. Provisional patent application Serial #: 61/122,192, December/15/08; USA2010/01511661 (June 17, 2010).
- Almenar, E.; Auras, R.; Harte, B.; Rubino, M.  $\beta$ -cyclodextrins as nucleating agents for polylactide (PLA). (U.S Patent No. 12/201,452, August 8, 2008). 20090060860  $\beta$ -cyclodextrins as nucleating agents for polylactide (PLA) (03/05/2009).
- Almenar, E.; Auras, R.; Harte, B.; Rubino, M. New alternatives to avoid fungal growth in food systems. (Invention disclosure number: 06-073; Provisional patent application # 60,598-013). WO/2700/103336 *Microencapsulation of volatile compounds into cyclodextrins (2007/09/13). Microencapsulation of volatile compounds into cyclodextrins: A new technology to reduce postharvest losses. Pub. No. : US 2007/0207981A1 (Sep.6/2007).*

### **BOOK CHAPTERS**

- Almenar, E. 2019. Chapter 12: Innovations in Packaging Technologies. Part 1: Basic Principles of CA/MA and Future Trends. In: Controlled and Modified Atmospheres for Fresh and Fresh-Cut Produce. Eds. M.I. Gil and R.M. Beaudry. Elsevier, Philadelphia, PA (USA).
- Almenar, E.; Siddiq, M., Merkel, C. 2012. Chapter 44: Packaging for processed food and the environment. In: Handbook of Food Process Design, Eds. M.S. Rahman, J. Ahmed, Wiley-Blackwell Publishing Limited, Oxford (United Kingdom). Pp: 1369-1405.
- Almenar, E.; Auras, R. 2010. Permeation, sorption, and diffusion in poly(lactic acid). In: Poly(lactic acid): Synthesis, Structure, Properties and Applications, Eds. R Auras, L-T Lim, S E M Selke, H Tsuji, Wiley and Sons, New York (USA). Pp. 155-179.
- Almenar, E.; Hernández-Muñoz, P., Lagarón, J.M., Catalá, R., Gavara, R. 2006. Advances in packaging technologies for fresh fruit and vegetables. In: Advances in Postharvest Technologies of Horticultural Crops. Benkeblia Nouredine and Shiomi Norio, Eds. Editorial: Research Signpost Publisher, Kerala (India). Pp. 87-112.

### **ARTICLES PUBLISHED IN PEER-REVIEWED JOURNALS**

- Pranata, M. P., González-Buesa, J., Chopra, S., Kim, K., Pietri, Y., Ng, P.K.W., Matuana, L.M., Almenar, E. 2019. Egg white protein film production through extrusion and calendaring processes and its suitability for food packaging applications. Food and Bioprocess Technology, 12(4): 714-727 (<https://doi.org/10.1007/s11947-019-2248-0>).

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- da Rocha Neto, A.C., Beaudry, R., Maraschin, M., Di Piero, R.M., Almenar, E. 2019. Double-bottom antimicrobial packaging for apple shelf-life extension. *Food Chemistry*, 279: 371-388 (<https://doi.org/10.1016/j.foodchem.2018.12.021>).
  - Jayeola, V., Jeong, S., Almenar, E., Marks, B., Vorst, K., Brown, W., Ryser, E. 2019. Predicting the growth of *Listeria monocytogenes* and *Salmonella typhimurium* in diced celery, onions, and tomatoes during simulated commercial transport, retail storage, and display. *Journal of Food Protection*, 82 (2): 287-300 (<https://doi.org/10.4315/0362-028X.JFP-18-277>).
  - Wilson, C.T.; Harte, J.; Almenar, E. 2018. Effect of sachet presence on consumer product perception and active packaging acceptability - a study of fresh-cut cantaloupe. *LWT- Food Science and Technology*, 92: 531-539 (<http://dx.doi.org/10.1016/j.lwt.2017.05.018>).
  - da Rocha Neto, A.C., da Rocha, A. B. d O., Maraschin, M., Di Piero, R.M., Almenar, E. 2018. Factors affecting the entrapment efficiency of  $\beta$ -cyclodextrins and their effects on the formation of inclusion complexes containing essential oils. *Food Hydrocolloids*, 77: 509-523 (<https://doi.org/10.1016/j.foodhyd.2017.10.029>).
  - Zhong, X.Y.; Siddiq, M.; Sogi, D.S.; Harte, B.; Dolan, K.D.; Almenar, E. 2017. Effect of microwave steamable bag design on the preservation of ascorbic acid and antioxidant capacity and on the physical properties of cooked frozen vegetables: A case study on broccoli (*Brassica oleracea*). *LWT- Food Science and Technology*, 83: 165-171 (<http://dx.doi.org/10.1016/j.lwt.2017.05.018>).
  - Chopra, S., Dhumal, S., Abeli, P., Beaudry, R., Almenar, E. 2017. Metal-organic frameworks have utility in sorption and release of ethylene and 1-methylcyclopropene in fresh produce packaging. *Postharvest Biology and Technology*, 130: 48-55 (<https://doi.org/10.1016/j.postharvbio.2017.04.001>).
  - Page, N.; González-Buesa, J.; Ryser, E. Harte, J. Almenar, E. 2016. Interactions between sanitizers and packaging gas compositions and their effects on the safety and quality of fresh-cut onions (*Allium cepa* L.). *International Journal of Food Microbiology*, 218: 105-113 (<http://dx.doi.org/10.1016/j.ijfoodmicro.2015.11.017>).
  - Adzaly, N.Z.; Jackson, A.; Kang, I.; Almenar, E. 2016. Performance of a chitosan-based casing under traditional sausage manufacturing conditions. *Meat Science*, 113, 116-123 (<http://dx.doi.org/10.1016/j.meatsci.2015.11.023>).
  - Zhong, X.Y.; Dolan, K.D.; Almenar, E. 2015. Effect of steamable bag microwaving versus traditional cooking methods on nutritional preservation and physical properties of frozen vegetables: A case study on broccoli (*Brassilia oleracea*). *Innovative Food Science and Emerging Technologies* 31, 116-122 (<http://dx.doi.org/10.1016/j.ifset.2015.07.002>).
  - Gartner, H.; Li, Y.; Almenar, E. 2015. Improved wettability and adhesion of polylactic acid/chitosan coating for bio-based multilayer film development. *Applied Surface Science*, 332: 488-493. (<http://dx.doi.org/10.1016/j.apsusc.2015.01.157>).
  - Koutsimanis, G.; Harte, J.; Almenar, E. 2015. Development and evaluation of a new packaging system for fresh produce: A case study on fresh cherries under global supply chain conditions. *Food and Bioprocess Technology: An International Journal*, 8(3): 655-669 (<http://dx.doi.org/10.1007/s11947-014-1437-0>).
  - Adzaly, N.Z.; Jackson, A.; Villalobos-Carvajal, R.; Kang, I.; Almenar, E. 2015. Development of a novel sausage casing. *Journal of Food Engineering*, 152: 24-31 (<http://dx.doi.org/10.1016/j.jfoodeng.2014.10.032>).

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- Wakai, M.; Almenar, E. 2015. Effect of the presence of montmorillonite on the solubility of whey protein isolate films in food model systems with different compositions and pH. *Food Hydrocolloids*, 43: 612-621 (<http://dx.doi.org/10.1016/j.foodhyd.2014.07.022>).
  - Koutsimanis, G.; Harte, J.; Almenar, E. 2015. Freshness maintenance of cherries ready for consumption using convenient, microperforated bio-based packaging. *Journal of the Science of Food and Agriculture*, 95(5): 972-982 (<http://dx.doi.org/10.1002/jsfa.6771>).
  - González-Buesa, J., Page, N., Kaminski, C., Ryser, E., Beaudry, R., Almenar, E. 2014. Effect of non-conventional atmospheres and bio-based packaging on the quality and safety of *Listeria monocytogenes*-inoculated fresh-cut celery (*Apium graveolens* L.) during storage. *Postharvest Biology and Technology*, 93: 29-37. (<http://dx.doi.org/10.1016/j.postharvbio.2014.02.005>).
  - Balaguer, M.P.; Fajardo, P.; Gartner, H.; Gomez-Estaca, J.; Gavara, R.; Almenar, E.; Hernandez-Munoz, P. 2014. Functional properties and antifungal activity of films based on gliadins containing cinnamaldehyde and natamycin. *International Journal of Food Microbiology*, 173: 62-71 (<http://dx.doi.org/10.1016/j.ijfoodmicro.2013.12.013>).
  - Lee, R.S.; Pranata, M.; Ustunol, Z.; Almenar, E. 2013. Influence of glycerol and water activity on the properties of compressed egg white-based bioplastics. *Journal of Food Engineering*, 118: 132-140 doi: (<http://dx.doi.org/10.1016/j.jfoodeng.2013.03.031>).
  - Koutsimanis, G.; Getter, K.; Behe, B.; Harte, J.; Almenar, E. 2012. Influences of packaging attributes on consumer purchase decisions for fresh produce. *Appetite*, 59: 270-280 (<http://dx.doi.org/10.1016/j.appet.2012.05.012>).
  - Joo, M.; Merkel, C.; Auras, R.; Almenar, E. 2012. Development and characterization of antimicrobial poly(lactic acid) containing trans-2-hexenal trapped into cyclodextrins. *International Journal of Food Microbiology*, 153: 297-305 (<http://dx.doi.org/10.1016/j.ijfoodmicro.2011.11.015>).
  - Joo, M.; Auras, R.; Almenar, E. 2011. Preparation and characterization of blends made of poly(lactic acid) and  $\beta$ -cyclodextrins: improvement of the blend properties by using a masterbatch. *Carbohydrate Polymers*, 86(2): 1022-1030 (<http://dx.doi.org/10.1016/j.carbpol.2011.05.058>).
  - Joo, M.; Lewandowski, N.; Auras, R.; Harte, J.; Almenar, E. 2011. Comparative shelf life study of blackberry fruit in bio-based and petroleum-based containers under retail storage conditions. *Food Chemistry*, 126(4): 1734-1740 (<http://dx.doi.org/10.1016/j.foodchem.2010.12.074>).
  - Almenar, E.; Samsudin, H.; Auras, R.; Harte, J. 2010. Consumer acceptance of fresh blueberries in bio-based packages. *Journal of the Science of Food and Agriculture*, 90(7): 1121-1128 (<http://dx.doi.org/10.1002/jsfa.3922>).
  - Almenar, E.; Hernández-Muñoz, P.; Gavara, R. 2009. Evolution of selected volatiles in chitosan-coated strawberries (*Fragaria* × *ananassa*) during refrigerated storage. *Journal of Agricultural and Food Chemistry*, 57: 974-980. (<http://dx.doi.org/10.1021/jf802319v>).
  - Almenar, E.; Hernández-Muñoz, P.; Catalá, R.; Gavara, R. 2009. Optimization of an active package for wild strawberries based on the release of 2-nonanone. *LWT-Food Science and Technology*, 42: 587-593 (<http://dx.doi.org/10.1016/j.lwt.2008.09.009>).
  - Hernández-Muñoz, P.; Almenar, E.; Del Valle, V.; Velez, D.; Gavara, R. 2008. Effect of chitosan coating combined with postharvest calcium treatment on strawberry (*Fragaria* × *ananassa*) quality during refrigerated storage. *Food Chemistry*, 110 (2): 428-435 (<http://dx.doi.org/10.1016/j.foodchem.2008.02.020>).



- Almenar, E.; Samsudin, H.; Auras, R.; Harte, B; Rubino, M. 2008. Postharvest shelf life extension of blueberries using a biodegradable package. *Food Chemistry*, 100(1): 120-127 (<http://dx.doi.org/10.1016/j.foodchem.2008.01.066>).
- Almenar, E.; Auras, R.; Wharton, P.; Rubino, M.; Harte, B. 2007. Release of acetaldehyde from  $\beta$ -CD inhibits postharvest decay fungi in vitro. *Journal of Agricultural and Food Chemistry*, 55: 7205-7212. (<http://dx.doi.org/10.1021/jf071603y>).
- Almenar, E.; Auras, R.; Rubino, M.; Harte, B. 2007. A new technique to prevent main post harvest diseases in berries during storage: Inclusion complexes  $\beta$ -CD-Hexanal. *International Journal of Food Microbiology*, 118: 164-172 (<http://dx.doi.org/10.1016/j.ijfoodmicro.2007.07.002>).
- Almenar, E.; Del Valle, V.; Catalá, R.; Gavara, R. 2007. Active packaging for wild strawberry fruit (*Fragaria vesca* L.). *Journal of Agricultural and Food Chemistry*, 55: 2240-2245. (<http://dx.doi.org/10.1021/jf062809m>).
- Almenar, E.; Del Valle, V.; Hernández-Muñoz, P.; Lagarón, J.M.; Catalá, R.; Gavara, R. 2007. Equilibrium modified atmosphere packaging of wild strawberries. *Journal of the Science of Food and Agriculture*, 87: 1931-1939 (<http://dx.doi.org/10.1002/jsfa.2938>).
- Almenar, E.; Hernández-Muñoz, P.; Lagarón, J.M.; Catalá, R.; Gavara, R. 2006. Controlled atmosphere storage of wild strawberry (*Fragaria vesca* L). *Journal of Agricultural and Food Chemistry*, 54 (1): 86-91 (<http://dx.doi.org/10.1021/jf0517492>).
- Hernández-Muñoz, P.; Almenar, E.; Ocio, M.J.; Gavara, R. 2006. Effect of calcium dips and chitosan coatings on postharvest life of strawberries (*Fragaria x ananassa*). *Postharvest Biology and Technology*, 39 (3): 247-253 (<http://dx.doi.org/10.1016/j.postharvbio.2005.11.006>).
- López-Rubio, A.; Lagarón, J.M.; Hernández-Muñoz, P.; Almenar, E.; Catalá, R.; Gavara, R.; Pascall, M.A. 2005. Effect of high pressure treatments on the properties of EVOH based food packaging materials. *Innovative Food Science and Emerging Technologies*, 6: 51-58 (<http://dx.doi.org/10.1016/j.ifset.2004.09.002>).
- López-Rubio, A.; Almenar, E.; Hernández-Muñoz, P.; Lagarón, J.M.; Catalá, R.; Gavara, R. 2004. Overview of active polymer-based packaging technologies for food applications. *Food Reviews International*, 20 (4): 357-386 (<http://dx.doi.org/10.1081/FRI-200033462>).
- Cava, D.; Lagarón, J-M.; López-Rubio, A.; Almenar, E., Catalá, R.; Gavara, R. 2004. Aplicación de la espectroscopia FT-IR para la evaluación de propiedades de transporte de componentes de aromas alimentarios a través de filmes poliméricos de uso en envases (I). *Revista de Plásticos Modernos*, 87: 150-157.
- Del-Valle, V.; Almenar, E.; Hernández-Muñoz, P; Lagarón, J.M.; Catalá, R.; Gavara, R. 2004. Volatile Organic Compounds Permeation through Porous Polymeric Films for Modified Atmosphere Packaging of Foods. *Journal of the Science of Food and Agriculture*, 84 (9):937-942 (<http://dx.doi.org/10.1002/jsfa.1741>).
- Hernández-Muñoz, P.; López-Rubio, A.; Del-Valle, V.; Almenar, E.; Gavara, R. 2004. Mechanical and Water Barrier Properties of Glutenin Films Influenced by Storage Time. *Journal of Agricultural and Food Chemistry*, 52: 79-83. (<http://dx.doi.org/10.1021/jf034763s>)
- Del Valle, V.; Almenar, E.; Lagarón, J.M.; Catalá, R.; Gavara, R. 2003. Modelling Permeation through Porous Polymeric Films for Modified Atmosphere Packaging. *Food Additives & Contaminants*, 20 (2): 170-179 (<http://dx.doi.org/10.1080/0265203021000042869>).

More information on the above citations can be found at <http://scholar.google.com/citations?user=DUNVWvQAAAAJ>

## ARTICLES PUBLISHED IN NON PEER-REVIEWED JOURNALS

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## COMMUNICATIONS

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- “Introduction to the research program of Prof. Eva Almenar.” MSU-SVV partnership workshop. May 20, 2018. Mumbai, India.
- “Sustainable packaging alternatives to reduce food waste.” Food Waste and Sustainability: Strategies to Improve Food Safety, Food Security, and Nutrition. September 27, 2018. Burr Ridge, IL, USA. (<https://www.eventbrite.com/e/food-waste-and-sustainability-strategies-to-improve-food-safety-food-security-and-nutrition-registration-43484140234#>)
- “Novel packaging for baked goods.” BakingTech 2018. February 26, 2018. Chicago, IL, USA. (<https://www.asbe.org/bakingtech2018/schedule-of-events/>)
- “Avances en tecnologías para envases.” Epicentro Cluser 2018. February 22, 2018. Cali, Colombia. (<http://www.ccc.org.co/epicentro-cluster-22-febrero-2018/>)
- “Materiales y tecnologías para envasado de alimentos y bebidas: Aplicaciones innovadoras.” Food Pack Summit 2017. September 27, 2017. Mexico City, Mexico. ([http://foodtechnologysummit.com/conferencia\\_pack/aplicaciones-innovadoras/](http://foodtechnologysummit.com/conferencia_pack/aplicaciones-innovadoras/))
- “Shelf-life prediction of packaged foods.” 1st Food Aid Packaging Solutions Workshop Series. A USAID, USDA, and MSU Collaborative effort. May 24, 2017. East Lansing, MI, USA.
- “Trends in food packaging.” Spring 2017 seminar program at the Southern Illinois University chemistry department. March 10, 2017. Carbondale, IL, USA (<http://chem.siu.edu/seminar-program/>)
- “Changes in flexible packaging in a challenging market.” 2016 UBE Change and Challenge: Ideas and inspiration for new products and business. Have you ever considered the possibilities of flexible packaging structure? November 08, 2016. Chicago, IL, USA.
- “Trends in modified atmosphere packaging.” New Technology Forum – Innovation in Packaging at the SPE ANTEC 2016. May 23, 2016. Indianapolis, IN, USA.
- “New packaging trends and their impact on in-package atmospheres: effect on food quality and safety.” Process Expo 2015. September 16, 2015. Chicago, IL, USA.
- “Study on the shelf life of fresh potatoes as affected by packaging.” Volm Companies’ sales meeting. April 30, 2014. Sun Valley, ID, USA.
- “Applications of bio-based materials in food packaging.” Process Expo 2013. November 4, 2013. Chicago, IL, USA.
- “Nuevas tendencias en empaques para productos perecederos.” II International Conference on Postharvest Quality Management of Horticultural Products of Interest for Tropic Regions (II

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- “Application of corn-based plastic materials, such as poly(lactic acid), PLA, to fresh produce packaging.” 2010 Gordon Research Conference on Postharvest Physiology. July 1, 2010. Tilton, NH, USA.
- “Measuring supply chain trends in the packaging of stem-free fresh sweet cherries: a sustainable approach” Section “Innovations in Fresh Fruit Packaging” of the Food Safety Demo Center. 2010 United Fresh Convention. April 23, 2010. Las Vegas, NV, USA.
- “De los polimeros sinteticos a los naturales.” Tendencias Internacionales en Envases y Materiales Ecosustentables. June 19-20 and 22, 2007. Santiago and Puerto Mont, Chile.

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#### **ORAL PRESENTATIONS**

- Spruit, D., Almenar, E., Peters, A., Salva, S. Project E-COMMFOOD. Phase 1:E-commerce food packaging market study. ISTA. The omni-channel packaging strategies conference 2019. October 2, 2019. Chicago, IL, USA.
- Fehlberg, J., Almenar, E. Use of Orange Juicing Waste for Development of Food Packaging Films. IFU Juice Conference 2019. May 27-30, 2019. Playa Del Carmen, Mexico (IFU Student Excellence Award 2019).

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- Almenar, E. Technical hurdles and best practices for 2018 e-Commerce food packaging as seen by Mondelēz International” prepared by Ms. Kerri Clark (Associate Director, People Planning and Strategy, Global Packaging, Mondelēz International, USA). 2018 IFT Food Packaging Symposium. July 17, 2018. Chicago, IL, USA.
  - Lopez, K., Fehlberg, J. A., Oglesby, M.B., Ryser, E., Harte, J., Cho, S., Rubino, M., Almenar, E. Development of a novel antimicrobial pouch made of polyethylene terephthalate coated with a UV-curable formulation containing 2-(E)-hexenal and its effects on blueberry shelf life. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2017). June 28, 2017. Las Vegas, NV, USA. (ePoster format. The format for an ePoster is a 15 minute research presentation followed immediately by 5 minutes of questions with a small seated audience).
  - Almenar, E. An overview of shelf life simulation of packaged food: methodologies, experimental designs, equations, and data analysis techniques. 2016 IFT Food Packaging Symposium. July 18, 2016. Chicago, IL, USA.
  - Croshon, H.; Gonzalez-Buesa, J.; Almenar, E. Development, characterization, and validation of new plastics made from natural resources. 2015 Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). July 22, 2015. East Lansing, MI, USA.
  - Almenar, E. Extending the shelf life of food using active packaging based on water regulation– A case study. 2015 IFT Food Packaging Symposium. July 12, 2015. Chicago, IL, USA.
  - González-Buesa, J.; Page, N.; Kaminski, C.; Ryser, E.; Beaudry, R.; Almenar, E. Interactions between atmospheres and sanitizers and their effect on the quality and safety of packaged fresh-cut celery (*Apium graveolens* L.). American Society for Horticultural Science Annual Meeting (ASHS). July 28-31, 2014. Orlando, Florida, USA.
  - Adzaly, N.Z.; Jackson, A.; Villalobos-Carvajal, R.; Kang, I.; Almenar, E. Development of a novel casing made of chitosan and its performance under traditional sausage manufacturing conditions. Shelf Life International Meeting (SLIM). June 11-13, 2014. Brunswick, New Jersey, USA (presented by Hayati Samsudin).
  - Jackson, A.; Adzaly, N.Z.; Almenar, E.; Ryser, E.; Harte, J. Antimicrobial properties of a novel sausage casing. MSU Sumer research opportunity program. July 24, 2013. East Lansing, MI, USA.
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  - Page, N.; Curlew, S.; Afrifah, K.; Wu, C.; Ryser, E.; Beaudry, R.; Almenar, E. Exploring novel packaging technologies on escherichia coli growth in baby spinach. International Controlled and Modified Atmosphere Research Conference (CAMA 2013). June, 3-7, 2013. Trani, Italy.
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  - Koutsimanis, G.; Harte, J.; Bix, L.; Harte, B.; Whiting, M.; McFerson, J.; Almenar, E. 2010. Measuring supply chain trends in the packaging of stem-free fresh sweet cherries a sustainable approach in package design, product characteristics and expectations. American Society for Horticultural Science Annual Meeting (ASHS). August, 2-5, 2010. Palm Desert, California, USA.
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  - Almenar, E.; Samsudin, H.; Auras, R.; Rubino, M.; Harte, B. Bio-based containers and 2E-hexenal: commercial and environmental benefits to prolong blueberries shelf life. American Society for Horticultural Science Annual Meeting (ASHS 2008). Orlando, Florida, USA.
  - Almenar, E.; Samsudin, H.; Auras, R.; Rubino, M.; Harte, B. Production and Mass Transfer Determination of Biodegradable Active Films. BioEnvironmental Polymer Society 14<sup>th</sup> Annual Meeting (BEPS 2007). International Symposium on Polymers and the Environment: Emerging Technology and Science. Vancouver, Washington, USA.
  - Almenar, E.; Auras, R.; Rubino, M.; Harte, B. Extended preservation of small fruits by release of 2E-hexenal from poly(lactide) films. American Society for Horticultural Science Annual Meeting (ASHS 2007). Scottsdale, Arizona, USA.
  - Almenar, E.; Auras, R.; Rubino, M.; Harte, B. Encapsulation of naturally occurring antifungal compounds into  $\beta$ -cyclodextrins: A new technology for reducing postharvest losses. American Society for Horticultural Science Annual Meeting (ASHS 2006). July, 26-29. New Orleans, USA.
  - Almenar, E.; Auras, R.; Rubino, M.; Harte, B. Application of environmentally friendly antimicrobial packaging films to avoid postharvest fungal growth. International Degradable Plastic Symposium: Status of Biobased and Synthetic Polymer Technology (BEPS 2006). Chicago, IL, USA.
  - Almenar, E., Cava, D.; Del Valle, V.; Lagarón, J.M.; Catalá, R.; Gavara, R. Mass transport across polymeric pore films. IX Simposio Latinoamericano de Polímeros. VII Congreso Iberoamericano de polímeros (SLAP 2004). Valencia, Spain.
  - Cava, D.; Lagarón, J.M.; Almenar, E.; Catalá, R.; Gavara, R. Caracterización mediante FT-IR de las propiedades de transporte de masa de compuestos de bajo peso molecular a través de películas poliméricas. IX Simposio Latinoamericano de Polímeros. VII Congreso Iberoamericano de polímeros (SLAP 2004). Valencia, Spain.
  - Almenar, E., Cava, D.; Del Valle, V.; Lagarón, J.M.; Catalá, R.; Gavara, R. Mass transport across polymeric pore films. II Congress of Young Researchers on Polymers (JIP 2004). Zarautz, Spain.
  - Cava, D.; Lagarón, J.M.; Almenar, E.; Catalá, R.; Gavara, R. Caracterización de las propiedades de transporte de componentes de aromas alimentarios en films poliméricos mediante técnicas FT-IR. II Congress of Young Researchers on Polymers (JIP 2004). Zarautz, Spain.
  - López-Rubio, A.; Hernández-Muñoz, P.; Almenar, E.; Lagarón, J.M.; Catalá, R.; Gavara, R.; Pascall, M.A. Effect of high pressure treatments on the properties of food packaging materials. International Conference Engineering and Food (ICEF9 2003). Montpellier, France.

## **POSTERS**

- Fehlberg, J.; Lee, Chun-Lung, Matuana, L.M.; Almenar, E. Converting agricultural waste into packages. The 2018 United Fresh University Showcase. June 25, 2018. Chicago, Illinois, USA.
- Spruit, D.; Almenar, A. Step isotherm research considering porous materials for water adsorption/desorption analysis. The 2017 Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). July 26, 2017. East Lansing, Michigan, USA.

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- Awalgaonkar, G., Almenar, E. Impact of temperature and relative humidity on the ethylene sorption capacity of selected scavengers. The 2017 United Fresh Convention. June 14, 2017. Chicago, Illinois, USA.
  - Lopez, K., Fehlberg, J. A., Oglesby, M.B., Lee, C-L., Ryser, E., Harte, J., Cho, S., Rubino, M., Almenar, E. Novel antimicrobial pouch to extend produce shelf life: a case study on blueberries. The 2017 United Fresh Convention. June 14, 2017. Chicago, Illinois, USA.
  - da Rocha Neto, A.C.; Di Piero, R. M.; Marachin, M.; Almenar, E. Determination of Factors Affecting the Entrapment Efficiency of  $\beta$ -cyclodextrins and Their Effects on the Formation of Inclusion Complexes Containing Essential Oils. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2016). July 19, 2016. Chicago, Illinois, USA.
  - Chopra, S., Dhumal, S., Abeli, P., Ryser, E., Beaudry, R., Almenar, E. Moisture regulation to control microbial growth on packaged produce. The 2016 United Fresh Convention. June 21, 2016. Chicago, Illinois, USA.
  - Wilson, C., Green, M., Kim, K., Costigan, M., Camêlo Guimarães, G.H., González-Buesa, J., Almenar, E. Viability of protein-based packages for blueberries retailed in vending machines. The 2016 United Fresh Convention. June 21, 2016. Chicago, Illinois, USA.
  - Croshon, H.; Gonzalez-Buesa, J.; Almenar, E. Development, characterization, and validation of new plastics made from natural resources. 2015 Mid-Michigan Symposium for Undergraduate Research Experiences (Mid-SURE). July 22, 2015. East Lansing, MI, USA.
  - Dhingra, D.; Chopra, S.; Ryser, E.; Almenar, E. Microbial quality and safety of diced tomatoes as affected by sanitation and packaging atmosphere during storage at 7 °C.. United Fresh 2015 Convention. June 09, 2015. Chicago, Illinois, USA.
  - González-Buesa, J.; Pokryfki, M.L.; Anthes C.; Almenar, E. Development of a novel film made from natural resources for produce packaging. United Fresh 2015 Convention. June 09, 2015. Chicago, Illinois, USA.
  - Vanderschaaf, N.; Szczygiel, E.; Yaganza E-S.; Harte, J.; Almenar, E. Sensory and physico-chemical quality of diced tomatoes as affected by different in-package gas compositions. United Fresh 2015 Convention. June 09, 2015. Chicago, Illinois, USA.
  - Dhingra, D.; Chopra, S.; Ryser, E.; Almenar, E. Microbial quality and safety of diced tomatoes as affected by sanitation and packaging atmosphere during storage at 7 °C. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2015). July 13, 2015. Chicago, Illinois, USA.
  - Scollon, A.; Page, N.; Almenar, E.; Ryser, E. Effect of sanitizer and in-package atmosphere on *Listeria monocytogenes* growth in diced yellow onions. Annual Meeting of the International Association of Food Protection (IAFP14). August 3-6, 2014. Indianapolis, Indiana, USA.
  - González-Buesa, J.; Page, N.; Kaminski, C.; Ryser, E.; Beaudry, R.; Almenar, E. 2014. Safety and quality of fresh-cut celery as affected by different sanitizers and atmospheres. United Fresh 2014 Convention. June 11, 2014. Chicago, Illinois, USA.
  - Page, N.; González-Buesa, J.; Huston, E.; Curlew, S.; Ryser, E.; Almenar, E. 2014. Interactions between sanitizing treatments and packaging gas compositions and their effects on the growth of spoilage microorganisms and *Salmonella* on fresh-cut onions. United Fresh 2014 Convention. June 11, 2014. Chicago, Illinois, USA.

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- González-Buesa, J.; Schwalm, J.; Almenar, E. Suitability of a novel bio-based material for packaging food products. Shelf Life International Meeting (SLIM). June 11-13, 2014. Brunswick, New Jersey, USA (presented by Hayati Samsudin).
  - Jackson, A.; Adzaly, Z.; Page, N.; Almenar, E.; Ryser, E.; Harte, J. 2013. Antimicrobial properties of a novel sausage casing. MSU Symposium for Undergraduate Research Experience. July 24, 2013. East Lansing, MI, USA.
  - González-Buesa, J.; Page, N.; Beaudry, R.; Almenar, E. 2013. Impact of in-package gas compositions on the color and texture of fresh-cut celery. United Fresh 2013 Convention. May 14, 2013. San Diego, California, USA.
  - Gartner, H.; González-Buesa, J.; Page, N.; Harte, J.; Almenar, E. Development of a novel sensory method to evaluate the texture changes in fresh-cut and whole produce. United Fresh 2013 Convention. May 14, 2013. San Diego, California, USA.
  - Gartner, H.; Page, N.; Harte, J.; Almenar, E. Development of a novel descriptive sensory analysis method to evaluate the texture changes in fresh-cut celery sticks. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2013). July 14-16, 2013. Chicago, Illinois, USA.
  - Page, N.; Curlew, S.; Afrifah, K.; Ryser, E.; Beaudry, R.; Almenar, E. The effect of different packaging technologies on *Escherichia coli* growth in baby spinach. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2013). July 14-16, 2013. Chicago, Illinois, USA. (Poster competition (Food Microbiology Division: Food Safety & Defense Posters)).
  - Koutsimanis, G.; Gartner, H.; Harte, J.; Almenar, E. Shelf-life extension of fresh sweet cherries using a microperforated biodegradable packaging system. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2013). July 14-16, 2013. Chicago, Illinois, USA. (Fruits and Vegetables Division: Food Processing and Packaging Posters).
  - Balaguer, M.P.; Fajardo, P.; Gavara, R.; Almenar, E.; Hernández-Muñoz, P. 2012. Active packaging of cheese with bioplastics based on wheat proteins and natural antimicrobials. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2013). July 14-16, 2013. Chicago, Illinois, USA. (Food Packaging Division: Food Processing & Packaging Posters).
  - Rai, D.R.; Almenar, E.; Joo, M.J. Estimation of controlled release of 2E-hexanal under varying relative humidity conditions for food packaging application. 21st Indian Convention of Food Scientists and Technologists. January 20-21, 2012. Pune, Maharashtra, India.
  - Balaguer, M.P.; Gartner, H.; Gavara, R.; Almenar, E.; Hernández-Muñoz, P. Effectiveness of wheat gluten-based films containing naturally occurring cinnamaldehyde and natamycin against the growth of main postharvest fungi. United Fresh 2012 Convention. May 1, 2012. Dallas, Texas, USA.
  - Lee, R.; Ryser, E.; Fulbright, D.; Almenar, E. 2012. Effect of rigid containers on the shelf life of shell-on chestnuts under retail storage conditions. United Fresh 2012 Convention. May 1, 2012. Dallas, Texas, USA.
  - Ryser, E.; Mark, B.; Almenar, E.; Dolan, K.; Vorst, K.; Wojtala, G.; Schaffner, D.; Scharff, R.; Beaudry, R.; Rubino, M.; Jeong, S.; Siddiq, M.; Harte, J. Minimizing microbial food safety hazards of fresh and fresh-cut fruits and vegetable. United Fresh 2012 Convention. May 1, 2012. Dallas, Texas, USA.

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- Almenar, E.; Humes, A.; Lee, R.; Sobon, S.; Johnson, D.; Morse, R.; Sidiqq, M.; Harte, J.; Ryser, E.; Harte, B. 2011. A new marketing approach for minimally processed onions. United Fresh 2011 Convention. May 3, 2011. New Orleans, LA, USA.
  - Balaguer, M.P.; Almenar, E.; Gavara, R.; Hernández-Muñoz, P. Antifungal activity of biopolymers made from wheat gluten containing naturally occurring cinnamaldehyde and natamycin. American Society for Horticultural Science Annual Meeting (ASHS 2011). September 25-28, 2011. Waikoloa, Hawaii, USA.
  - Koutsimanis, G.; Harte, J.; Bix, L.; Almenar, E. Impact of storage conditions and package design on the shelf life of stem-free cherries. The Washington State Horticultural Association's 54<sup>th</sup> IFTA Annual Conference & Intensive Workshop: Sustainable Innovation (IFTA 2011). February 26, 2011. Pasco, WA, USA.
  - Harte, J.; Gartner, H.; Almenar, E.; Samsudin, H. Using antioxidant combinations to improve the quality of intermediate moisture eggs under accelerated storage. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2011). New Orleans, LA, USA (Division: Sensory Science).
  - Koutsimanis, G.; Harte, J.; Bix, L.; Almenar, E. Impact of storage conditions and package design on the shelf life of stem-free cherries. The Washington State Horticultural Association's 106<sup>th</sup> Annual Meeting (WSHA 2010). December 6-8, 2011. Portland, WA, USA.
  - Koutsimanis, G.; Harte, J.; Bix, L.; Almenar, E. A new retail package for fresh sweet cherries. The 2010 Great Lakes Fruit, Vegetable & Farm Market EXPO. December 6-8, 2011. Grand Rapids, MI, USA.
  - Smolarski, J.; Joo, M.J.; Almenar, E. Effect of packaging on the evolution of the aroma profile of blackberry fruit during commercialization. The 2010 University Undergraduate Research and Arts Forum (UURAF 2010). April 16, 2010. East Lansing, MI, USA.
  - Lewandowski, N.; Joo, M.J.; Almenar, E. Effects of package design and material on anthocyanin content of blackberries. The 2010 University Undergraduate Research and Arts Forum (UURAF 2010). April 16, 2010. East Lansing, MI, USA.
  - Koutsimanis, G.; Harte, J.; Bix, L.; Harte, B.; Whiting, M.; McFerson, J.; Almenar, E. Measuring supply chain trends in the packaging of stem-free fresh sweet cherries: a sustainable approach in package design, product characteristics and expectations. United Fresh Convention. April 23, 2010. Las Vegas, Nevada, USA.
  - Joo, M.J.; Auras, R.; Harte, J.; Almenar, E. 2010. Comparative shelf life study of blackberry fruit in bio-based and petroleum-based containers under retail storage conditions. United Fresh Convention. April 23, 2010. Las Vegas, Nevada, USA.
  - Joo, M.J.; Nayaran, R.; Auras, R.; Almenar, E. Bends of poly(lactic acid) and modified starch. Global Plastic Environmental Conference (GPEC 2010). March 8-10, 2010. Orlando, Florida, USA.
  - Humes, A.; Harte, B.; Almenar, E.; Harte, J.; Siddiq, S.; Novak, D. Development of a package system for fresh peeled onions for retailed markets. ANR Week Luncheon Reception. March 9, 2010. East Lansing, Michigan, USA.
  - Joo, M.J.; Auras, R.; Harte, J.; Almenar, E. Comparative study of blackberry fruit in bio-based and petroleum-based containers under retail storage conditions. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2010). July 18-20, 2010. Chicago, IL, USA. (Fruits and Vegetables Division: Food Packaging Division).

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- Benyathiar, P.; Almenar, E.; Auras, R.; Harte, J.; Harte, B. Ryser, E. 2010. A microperforated pouch made of poly(lactic acid) for fresh-cut green lettuce. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2010). July 18-20, 2010. Chicago, IL, USA. (Fruits and Vegetables Division: Food Packaging Division).
  - Humes, A.; Harte, B.; Almenar, E.; Siddiq, M.; Harte, J. Development of a packaging system for fresh peeled onions in retail markets. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2010). July 18-20, 2010. Chicago, IL, USA. (Fruits and Vegetables Division: Food Packaging Division).
  - Whiting, M.D.; Dhingra, A.; Oraguzie, N.; Zhang, Q.; Allard, R.; Bryan, V.; Almenar, E.; Grant, J.; Harte, J.; Long, L.; Pierce, F.; Ross, C.; Seavert, C. A total systems approach to developing a sustainable stem-free sweet cherry production, processing, and marketing system. 6<sup>th</sup> International Cherry Symposium. November 16-19, 2010. Renaca, Chile.
  - Whiting, M.D.; Dhingra, A.; Oraguzie, N.; Zhang, Q.; Allard, R.; Bryan, V.; Almenar, E.; Grant, J.; Harte, J.; Long, L.; Pierce, F.; Ross, C.; Seavert, C. A total systems approach to developing a sustainable stem-free sweet cherry production, processing, and marketing system. Washington State Hort. Association Annual Meeting. December 6-8, 2010. Yakima, Washington, USA.
  - Whiting, M.D.; Dhingra, A.; Oraguzie, N.; Zhang, Q.; Allard, R.; Bryan, V.; Almenar, E.; Grant, J.; Harte, J.; Long, L.; Pierce, F.; Ross, C.; Seavert, C. A total systems approach to developing a sustainable stem-free sweet cherry production, processing, and marketing system. Cherry Institute meeting. January, 2010. Yakima, Washington, USA.
  - Benyathiar, P.; Almenar, E.; Auras, R.; Ryser, E.; Harte, J.; Siddiq, M.; Harte, B. An environmentally friendly alternative to the widespread petroleum-based flexible pouches for ready-to-eat green leaves. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2009). June, 6-10. Anaheim, CA, USA. (Fruits and Vegetables Division: Safety and Quality).
  - Joo, M.J.; Samsudin, H.; Almenar, E.; Auras, R.; Harte, J.; Harte, B. Evaluation of biodegradable antimicrobial packaging films for highbush blueberries. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2009). June, 6-10. Anaheim, CA, USA. (Fruits and Vegetables Division: Food Packaging Division).
  - Samsudin, H.; Almenar, E.; Auras, R.; Harte, B.; Harte, J.; Rubino, M. Microperforated PLA: a new environmentally friendly technology to improve blueberry shelf life. Institute of Food Technologists Annual Meeting and Food Expo (IFT 2009). June, 6-10. Anaheim, CA, USA. (Fruits and Vegetables Division: Safety and Quality).
  - Patnarin, B.; Almenar, E.; Auras, R.; Ryser, E.; Harte, J.; Siddiq, M.; Harte, B. A sustainable package for fresh-cut green salad. The United Fresh Convention 2009. April, 21-24. Las Vegas, Nevada, USA.
  - Samsudin, H.; Almenar, E.; Auras, R.; Harte, B.; Harte, J.; Rubino, M. Microperforated PLA: a new environmentally friendly technology to improve blueberry shelf life. Graduate Academy Conference 2009 (GAC 2009). Michigan State University. East Lansing, MI, USA.
  - Patnarin, B.; Almenar, E.; Auras, R.; Ryser, E.; Harte, J.; Siddiq, M.; Harte, B. Bioplastic containers for fresh-cut green salad. Graduate Academy Conference 2009 (GAC 2009). Michigan State University. East Lansing, MI, USA.

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- Lee, R.S.; Almenar, E.; Auras, R.; Harte, J.; Harte, B.; Rubino, M. Characterization of the poly(lactic acid) sheet during and after exposure to main aroma compounds of food. Graduate Academy Conference 2009 (GAC 2009). Michigan State University. East Lansing, MI, USA.
  - Legowo, A.; Almenar, E. A relationship between an enzymatic modified starch and water. The 2009 University Undergraduate Research and Arts Forum (UURAF 2009). MSU, East Lansing, MI, USA.
  - Benyathiar, P.; Almenar, E.; Auras, R.; Harte, J.; Siddiq, M.; Harte, B. Sustainable Food Package for Fresh-cut Green Salad. Packaging Executives Forum-II. Jan/2009, East Lansing, MI, USA.
  - Almenar, E.; Samsudin, H.; Auras, R.; Rubino, M.; Harte, B. Development and characterization of a biodegradable active film. Packaging Executives Forum-II. Jan/2009, East Lansing, MI, USA.
  - Almenar, E.; Samsudin, H.; Auras, R.; Harte, B.; Rubino, M. Biodegradable packaging with 2E-Hexenal: an improvement of blueberry marketable quality with less environmental impact. IFT 2008 Annual Meeting & Food Exposition. New Orleans, LA, USA.
  - Samsudin, H.; Almenar, E.; Auras, R.; Harte, B.; Rubino, M. Innovative Container to prolonging the shelf life of blueberry fruit. IFT 2008 Annual Meeting & Food Exposition. New Orleans, LA, USA.
  - Almenar, E.; Hernández-Muñoz, P.; Gavara, R. Evolution of aroma volatiles in coated strawberries under refrigerated storage. American Society for Horticultural Science Annual Meeting (ASHS 2008). Orlando, Florida, USA.
  - Almenar, E.; Samsudin, H.; Auras, R.; Rubino, M.; Harte, B. PLA and 2E-hexenal: commercial and environmental benefits to prolong blueberries shelf life. Packaging Executives Forum-I. Jan/2008, East Lansing, MI, USA.
  - Almenar, E.; Samsudin, H.; Auras, R.; Rubino, M.; Harte, B. Development and characterization of a biodegradable active film. 23<sup>rd</sup> IAPRI Symposium on Packaging (IAPRI 2007). Windsor, England.
  - Almenar, E.; Auras, R.; Rubino, M.; Harte, B. PLA- $\beta$ CD-2E-hexenal: A friendly environmental antimicrobial film to prolong blueberry fruit shelf life. IFT 2007 Annual Meeting & Food Exposition. Chicago, IL, USA.
  - Almenar, E., Wharton, P., Auras, R., Rubino, M. and Harte, B. Release of acetaldehyde from beta-cyclodextrins to prevent spoilage of fresh produce due to postharvest diseases. 2007 APS/SON Joint Meeting. July, 28-August, 1. San Diego, CA, USA.
  - Almenar, E.; Hernández-Muñoz, P.; López-Carballo, G.; González, L.; Lagarón, J.M.; Catalá, R.; Gavara, R. Effects of temperature on the fungicidal effectiveness of three natural compounds against *Botrytis cinerea*. 1<sup>st</sup> International Conference on Environmental Industrial and Applied Microbiology (BioMicroWorld 2005). Badajoz, Spain.
  - Almenar, E.; López-Rubio, A.; Del Valle, V.; Gavara, R.; Catalá, R.; Lagarón, J.M. Study and development of an equilibrium modified atmosphere packaging system for wild strawberries. 3<sup>o</sup> International Symposium on Food Packaging: Ensuring the Safety, Quality and Traceability of Foods (ILSI Europe-2004). Barcelona, Spain.
  - Hernández-Muñoz, P.; López-Rubio, A.; Almenar, E.; Langarón, J.M.; Gavara, R. Polymerized gliadins from wheat gluten as food packaging biomaterials. 3<sup>o</sup> International Symposium on Food Packaging: Ensuring the Safety, Quality and Traceability of Foods (ILSI Europe 2004). Barcelona, Spain.

- Hernández-Muñoz, P.; Almenar, E.; Cava, D.; Lagarón, J.M; Catalá, R.; Gavara, R. Effects of the chemical nature of the plasticizer on the mechanical and water barrier properties of cysteine treated gliadin films. 12th IAPRI World Conference on Packaging (IAPRI 2004), Stockholm, Sweden.
- Del Valle, V.; Almenar, E.; Sebastián, R.; Catalá, R.; Gavara, R. Segments on mandarin package in MAP. III Ibero American Congress on Food Engineering (CIBIA 2001). Valencia, Spain.
- Galdeano, P.; Del Valle, V.; Almenar, E.; Sebastián, R.; Catalá, R.; Gavara, R. Cloves of garlic package in MAP. III Ibero American Congress on Food Engineering (CIBIA 2001). Valencia, Spain.

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## **GOVERNANCE AND SERVICE ACTIVITIES**

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### **DEPARTMENT SERVICE**

- Mentoring undergraduate participants in the School of Packaging Undergraduate Research Program (FS15; SuS16; FS16; SuS17; FS18; SS19).
- Advisory committee (Chair: August/16-August/17; member: August/15-August/16; August/18-August/20).
- Director search committee (Member; October/18-July/19).
- Academic specialist search committee (Chair, May/18- July/18).
- Curriculum committee (Chair: August/14-August/15; member: May/09-April/10; September/11-August/12; August/13-August/14; August/17-August/18).
- Faculty search committee (toxicology of packaging materials) (Member; October/16-May/17).
- Undergraduate Research Committee (Chair; May/15-August/16).
- Faculty search committee (polymer chemist) (Member; August/15-July/16).
- Graduate committee (member, May/10-April/11).
- Research committee (member, May/10-April/11).
- Graduate affairs committee (member, May/10-April/11).

### **COLLEGE SERVICE**

- Representing Michigan State University AgBioResearch at the multistate research project “S-294 Multi-State Project on Postharvest Quality and safety in Fresh Cut Vegetables and Fruits” (2009-present).
- Member of the CANR’s Global Strategy Advisory Committee (member; March/18-September/18).
- Mentoring undergraduate participants in the College of Agriculture and Natural Resources Undergraduate Research Program (2010, 2011, 2014, 2016, 2018).
- Teaching and Academic Policy Committee (ex-officio; August/15-August/17).
- Mentoring undergraduate and high school participants in the COHORT (College-High School Research Teams) Program (2016).
- Invited as a global food security and systems panelist of an expert panel at the 2016 World Food Prize Michigan Youth Institute (May 12, 2016).



- Served as committee member to evaluate faculty mentoring in the College of Agriculture and Natural Resources (09/21/15 & 10/21/15).

### **UNIVERSITY SERVICE**

- Served as mentor of undergraduates with an Honors College's professional assistantship (2010, 2011, 2013-19).
- University Committee on Undergraduate Education (Member; August/15-August/2017).
- Served as judge for the University Undergraduate Conference and Art Forum (UURAF), Michigan State University, East Lansing, MI, USA (2009, 2010, 2011, 2016).
- Served as mentor of MSU Summer Research Opportunity Program (SROP) participants (May 27-July 27, 2013 and May 18-July 23, 2015) (<http://www.grad.msu.edu/SROP>).
- Served as student recruiter for The Michigan State University College Assistance Migrant Scholars Program (MSU CAMP) (March 22, 2012).
- Served as judge for the Graduate Academic Conference (GAC), Michigan State University, East Lansing, MI, USA (2009).
- Created and offered the Grandparents University Sessions: With or Without Packaging: Which Cereals Do You Like More? Session I (June, 2009) and Session II (July, 2009).

### **PROFESSIONAL SERVICE**

- Reviewer of peer-reviewed journals (~100 manuscripts).
- Reviewer of research project proposals (3 proposals).
- Reviewer of technical research papers for the Institute of Food Technologists Annual Meeting (2015; 2016; 2017; 2018; 2019).
- Advisory board for research projects (2016-present).

### **OUTREACH AND EXTENSION/PUBLIC SERVICE**

#### **COMMUNICATIONS**

- Almenar, E. Research update at the 2019 S-294 meeting. June 12, 2019. Chicago, Illinois, USA.
- Almenar, E. Research update at the 2018 S-294 meeting. June 24, 2018. Chicago, Illinois, USA.
- Almenar, E. Food packaging trends. Presented to members of the International Packaging Institute. September 13, 2017. East Lansing, Michigan, USA.
- Almenar, E. Research update at the 2016 S-294 meeting. June 21, 2016. Chicago, Illinois, USA.
- Almenar, E. Research update at the 2015 S-294 meeting. June 9<sup>th</sup>, 2015. Chicago, Illinois, USA.
- Almenar, E. and rest of S-294 members. A Research Briefing of the S-294 Multi-State Research Project on Quality and Safety of Fresh-Cut Vegetables & Fruits. Presented at the United Fresh

- Produce Association Food Safety and Technology Council meeting. June 9<sup>th</sup>, 2015. Chicago, Illinois, USA.
- Almenar, E. Introduction to the fresh produce packaging research group to the MI tree fruit commission. January 15, 2015. Traverse City, Michigan, USA.
  - Almenar, E. Introduction to the fresh produce packaging research group to the U.S. Department of Commerce, SABIT Program, Fruit and Vegetable Processing and Packaging (19 fruit and vegetable processing and packaging professionals from Eurasia). September 10, 2013. East Lansing, Michigan, USA.
  - Almenar, E. Development of a biodegradable film to provide extended shelf life, increased safety and sustainability for the produce industries. March 30, 2013. Clarksville, Michigan, USA.
  - Almenar, E. Introduction to the School of Packaging and to the fresh produce packaging research group. Visit to Lincoln University. February 13, 2013. Oxford, Pennsylvania, USA.
  - Almenar, E. Effect of rigid containers on the shelf life of shell-on chestnuts under retail storage conditions. 2012 Midwest Nut Producers Council. February 25, 2012. Clarksville, Michigan, USA.
  - Almenar, E. Extensión de la vida útil de los arándanos mediante el uso de envases. Buenas Prácticas Agrícolas (GAP) para la Producción de Arándanos (Blueberries). Food Safety Risk Management Tools for Spanish-Speaking Audiences (Certificate program). June, 2011. Fennville, Michigan, USA.
  - Almenar, E. Bio-based packaging alternatives for the commercialization of fresh chestnuts. 2011 Midwest Nut Producers Council. March 12, 2011. Clarksville, Michigan, USA.
  - Almenar, E. Postharvest Shelf life Extension using Packaging Technologies. Risk Management Tools for Food Safety; Good Agricultural Practices (GAP) for Blueberry Production (Certificate Program 2011). May, 2011. Fennville, Michigan, USA.
  - Almenar, E. Postharvest Shelf life Extension using Packaging Technologies. Risk Management Tools for Food Safety; Good Agricultural Practices (GAP) for Blueberry Production (Certificate Program 2011). March, 2011. Fennville, Michigan, USA.
  - Almenar, E. "Shelf-stable packaging". Midwest Chestnut Farm Conference 2010. August 21, 2010. Jackson, Michigan, USA.
  - Almenar, E. Adequate Storage and Packaging Technologies for Apples. GAP for Food Safety preparedness for 3rd party audits in apple production (Certificate Program 2010). April 28, 2010. Fennville, Michigan, USA.
  - Almenar, E. Postharvest Physiological Disorders and Diseases of Apples. GAP for Food Safety preparedness for 3rd party audits in apple production (Certificate Program 2010). April 28, 2010. Fennville, Michigan, USA.
  - Almenar, E. Postharvest Shelf life Extension using Packaging Technologies. Good Agricultural Practices (GAP) for Food Safety in Blueberry Production (Certificate Program 2010). February 25, 2010. Fennville, Michigan, USA.
  - Almenar, E. Postharvest Shelf life Extension using Packaging Technologies. Good Agricultural Practices (GAP) for Food Safety in Blueberry Production (Certificate Program 2009). April, 2009. Fennville, Michigan, USA.

## **BROCHURES/HANDOUTS**

- Koutsimanis, G.; Harte, J.; Beaudry, R.; Harte, B.; Almenar, E. 2012. Developing a bio-based packaging system for fresh, sweet cherries in WSU IAREC Cherry Field Day Handout (*release: Jun/2012*).
- Koutsimanis, G.; Harte, J.; Bix, L.; Harte, B.; Behe, B.; Gette, K., Almenar, E. 2011. An update on developing a bio-based packaging system for fresh, sweet cherries in WSU IAREC Cherry Field Day Handout (*release: Jun/2011*).
- Koutsimanis, G.; Harte, J.; Bix, L.; Harte, B.; Whiting, M.; McFerson, J.; Almenar, E. 2010. Measuring supply chain trends in the packaging of stem-free fresh sweet cherries: a sustainable approach in package design, product characteristics and expectations in WSU IAREC Cherry Field Day Handout (*release: Jun/2010*).
- Almenar, E.; and Auras, R. 2009. Biodegradable packaging-MSU studies show excellent results for blackberries (*release: Sept/2009*).

## **FORUMS**

- Benyathiar, P.; Almenar, E.; Auras, R.; Harte, J.; Siddiq, M.; Harte, B. Sustainable Food Package for Fresh-cut Green Salad. Packaging Executives Forum-II. Jan/2009, East Lansing, MI, USA (Poster).
- Almenar, E.; Samsudin, H.; Auras, R.; Rubino, M.; Harte, B. Development and characterization of a biodegradable active film. Packaging Executives Forum-II. Jan/2009, East Lansing, MI, USA (Poster).
- Almenar, E.; Samsudin, H.; Auras, R.; Rubino, M.; Harte, B. PLA and 2E-hexenal: commercial and environmental benefits to prolong blueberries shelf life. Packaging Executives Forum-I. Jan/2008, East Lansing, MI, USA (Poster).

## **GROWER/PRIVATE COMPANY ADVISING/CONDUCTED RESEARCH**

During the last seven years, I have helped growers and private industry with the commercialization of different perishables, the validation of current packaging systems, the development and validation of packaging alternatives/concepts for new markets for crops, and methodologies for the characterization of materials (> 70 total). As a result, better packaging concepts are available in the market and the quality and safety of the fresh produce is being improved.

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## **PROFESSIONAL MEMBERSHIPS**

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2007-2010, 2013-present Institute of Food Technologists (IFT)  
2009-present International Association of Packaging Research Institutes (IAPRI)  
2019 – present International Society for Horticultural Science (ISHS)

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## **LANGUAGE PROFICIENCY**

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Multilingual in Spanish (native), Catalan (native) and English.