Lisa M. Weaver, Ph.D.

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Scientist and leader with experience in defining technical strategies and staffing teams with the right mix of skills to solve problems and meet business needs. Experience developing and implementing organization-wide processes needed to support technical organizations.

Technical Strategy	People Leadership
Project Management	Staffing and Developing Teams
Process Development	Process Improvement
Internal Collaboration to move projects forward	Large/small molecule analysis

Determine external collaborators for key technical contributions

PROFESSIONAL EXPERIENCE

Consultant, Underhill Technology **2018-present**

Senior Program Manager, Citrus Research & Development Foundation **2017-2018**

Contract Management, oversight of program managers

Senior Supervisor, Bio-Analytical Development, Millpore Sigma **2016-2017**

Leadership: People lead for chemists and biochemists characterizing various biomolecules, focused on bioconjugates and antibody-drug conjugates. Reviewed proposals for feasibility, helped to develop quotes in response to requests for proposals, developed large molecule analytical strategy as part of a custom CMO.

Biologicals Process Development Lead, Monsanto **2011-2016**

Leadership: Developed strategy to produce and analyze molecules for commercial scale production and reduce cost of goods. Staffed and led a multidisciplinary and international team. Transferred technology from acquired company, scaled up the technology, and implemented cost reduction strategy which lowered cost three orders of magnitude. Developed a novel, even lower cost option to produce molecules at commercial scale.

Collaboration: Interfaced extensively with Legal, Supply Chain, and Regulatory organizations to advance process to commercial feasibility

Chemistry Technology Operations Lead, Monsanto **2007-2011**

Safety: Created robust matrix structure to address local team and larger organizational safety needs

Agreements and Collaborations: Developed process for initiating B2B agreements/alliances that included information and intellectual property capture

Goals and Objectives: facilitated annual organizational goals for 200+ person organization working within five research programs, tracked research progress against objectives

Intellectual Property (IP)/Freedom to Operate (FTO): Led team engaged in IP processes including FTO, disclosure, and patent drafting; quality systems (GLP, ISO), data systems (data capture and retrieval), and material flow in and out of the organization in compliance with stewardship directives.

Biotech Ag Traits Project Manager/Operations Lead, Monsanto 2005-2007

Portfolio: Tracked costs and metrics for the Ag Traits portfolio.

Efficiency Increases: Increased turn-around in functional teams by introducing process mapping and optimization for technical processes

Business continuity planning: Developed decision process for graceful shutdown/restart of pipeline

Various technical leadership roles within Monsanto Technology 1996-2005

Enabled the small molecule analysis of >10,000 plant samples annually, by developing and executing submission, workflow, and data turnaround processes including tracking, inventory, and data archiving.

Developed and executed the metabolic engineering strategy to accumulate desired metabolites in plants by staffing and leading a multidisciplinary team of scientists focused on plant biochemistry, enzyme characterization, and small molecule analysis

Mode of action of small molecule gametocides, herbicides, and fungicides.

CONTINUING EDUCATION/ACTIVITIES

Coursera - Python Programming, Data Structures, Accessing Web Data, and Using Databases with Python (U of MI)
Krannert Business School -Applied Management Principles Program
Webster University- Organizational Behavior
Krannert Institute - Asset Based Thinking Leadership Forum
LEAN /6s, and TRIZ innovation Principles
American Management Association- Technical Project Management
Postdoctoral Research

- Los Alamos National Lab/NMSU- Optimization of tabtoxin production by plant pathogenic bacteria *P. syringae* pv *tabaci,* plant microbe interactions between legumes, *P. syringae*, and *Rhizobium* sp.
- Iowa State University – Biotin dependent carboxylases and biotin biosynthesis

AWARDS

YWCA Women's Leadership Award
Associate Fellow, Monsanto
Chemistry Technology Collaboration Award

SERVICE

Assistant Instructor – Introduction to Python for STEM girls at Westminster Christian Academy
Preparing Tomorrow's Leaders in Science, U. Missouri, Columbia: led workshop on principles of project management (2015)

Interview panel for Monsanto Emerging Leaders in Science program, multiple years (2011-2015).
Mentoring: Technology and Chemistry Technology mentoring programs, multiple years
Monsanto Science Ambassador, outreach and recruiting (2015-present)
Monsanto Technology Women's Working Group (2014-present)
Member of team composed of science and HR professionals recommending and implementing actions to advocate and develop female scientists/technical professionals.
Fellow Planning Committee Member- Chemistry Technology Representative (2014-present)
Reviewed and recommended symposia and poster presentations for internal company-wide technical meeting, led organizational nomination process, and represented Monsanto at the Industry Fellow Forum, 2014.

EDUCATION

Purdue University, IN
Ph.D. Biochemistry
Dissertation: Amino acid insensitive DAHP synthases

Idaho State University, ID
BS Biochemistry, Minor: Physics
Magna Cum Laude

PATENTS AND PUBLICATIONS

- **Sequences of temporal seed promoters for expressing genes in plants.** Wang, Qi; Weaver, Lisa M.; Oulmassov, Tim N.; Ahrens, Jeffrey; Dubois, Patrice; Shen, Q. (USA). **Three U.S. Patents 7179959, 7615680, 8193413**

- **Transgenic plants carrying a foreign anthranilate synthase gene with increased tryptophan content**. Weaver, Lisa M.; Oulmassov, Tim N.; Vaduva, Gabriela; Liang, Jihong; Varagona, Marguerite J.; Venkatesh, Tyamagondlu V. (USA). **Three U.S. Patents 7217865, 7714189, 8158851**

- **Plants with increased levels of one or more amino acids**. Lisa M Weaver, Timothy A Mitsky, William D Rapp, Kenneth J Gruys, Jihong Liang, Gabriela Vaduva: (2005): US Appl. 20050289668

- **Methods and compositions for weed control in which plants are sensitized to ALS inhibitor herbicides by application of polynucleotide essentially identical or complementary to ALS gene**. Ader, Daniel; Finnessy, John J.; Li, Zhaolong; Taylor, Christina Marie; Taylor, Jennifer Chou; Shah, Ronak Hasmukh; Tao, Nengbing; Wang, Dafu; Weaver, Lisa Marie U.S. Pat. Appl. Publ. (2013), US 20130067618 A1 20130314
- **Compositions and Methods for the Production and Delivery of Double Stranded RNA.** Baum, James; Christian, Allen; Evdokimov, Artem; Moshiri, Fred; Weaver, Lisa M.; Zhang, Haitao U.S. Pat. (2016) US9445603 B2

- Che P**, Weaver LM,** Wurtele ES, and Nikolau BJ **(2003)**. The role of biotin in regulating 3-methylcrotonyl-CoA carboxylase expression in Arabidopsis Plant Physiol, 131:1479-1486
- Zhao J, **Weaver LM,** and Herrmann KM **(2002).** Translocation of 3-deoxy-D-arabino-heptulosonate 7-phosphate synthase into isolated chloroplasts. Planta 216:180-186
- **Weaver Lisa M**, Directed metabolite profiling and carotenoid pathway manipulation: Everything Old is New Again. (2002) Abstracts of Papers, 224th ACS National Meeting, Boston MA.
- Herrmann KM and **Weaver LM (1999)**. The Shikimate Pathway. Ann Rev Plant Physiol Plant Mol Biol. 50:473-503.

- **Weaver LM,** and Herrmann KM **(1997).** Dynamics of the Shikimate Pathway in Plants. Trends in Plant Sciences 2: 346-351
- Choi JK, Ke J, McKean A, **Weaver LM,** Wen TN, Sun J, Diez T, Yu F, Guan X, Wurtele ES and Nikolau BJ **(1997).** Molecular Biology of Biotin-containing enzymes required in lipid metabolism. In Physiology, Biochemistry, and Molecular Biology of Plant Lipids eds JP Williams, MU Khan, and NW Lem, pp363-367. Kluwer Academic Publishers, Dordrecht, Netherlands.
- **Weaver LM,** Yu F, Wurtele ES and Nikolau BJ**.** (1996) Characterization of the cDNA and Gene Coding for the Biotin Synthase of Arabidopsis thaliana. Plant Physiology 110: 1021-1028.
- **Weaver LM,** LeBrun L, Franklin A, Huang L, Hoffman N, Wurtele ES, and Nikolau B. (1995) Molecular Cloning of the Biotinylated Subunit of 3-Methylcrotonyl-CoA Carboxylase of A. thaliana. Plant Physiology 107: 1013-1014
- Nikolau BJ, Caffrey JJ, Diez T., Huang J-Y, Shang X-M, **Weaver LM** and Wurtele ES. (1995) Biochemical and Molecular Biological Characterizations of Acetyl-CoA Carboxylases. In Plant Lipid Metabolism. (eds J-D Kader and P Mazliak) pp 39-42.
- Caffrey JJ, Chen Y, Diez T, Guen X, Huang J-Y, Mckean AL, Song J, Shang X-M, Wang X, **Weaver LM,** Wurtele ES and Nikolau BJ. (1995) Biochemical and Molecular Biological Characterization of Biotinylated Proteins in Plants. In Plant Lipid Metabolism. (eds J-D Kader and P Mazliak) pp 49-51
- Nikolau BJ, Wurtele ES, Caffrey J, Chen Y, Crane V, Diez T, Huang J-Y, McDowell MT, Shang X-M, Song J-P, Wang X, and **Weaver LM.** (1993) The Biochemistry and Molecular Biology of Acetyl-CoA Carboxylase and Other Biotin Enzymes in Biochemistry and Molecular Biology of Membrane and Storage Lipids of Plants eds. N. Murata and CR Somerville pp138-149
- **Weaver LM,** Pinto JEBP, and Herrmann KM**.** (1993) Expression of Potato 3-deoxy-D-arabino-heptulosonate-7-phosphate Synthase in E. coli. Biorganic Med Chem Lett. 3: 1421-1428
- Herrmann KM, Zhao J, Pinto JEBP**, Weaver LM,** and Henstrand JM. (1992) Regulation of Carbon Flow into the Shikimate Pathway. In Biosynthesis and Molecular Regulation of Amino Acids in Plants eds. Singh, BK, Flores, HE, and Shannon, JC. Current Topics in Plant Physiology vol. 7. pp. 12-18.

MOSANTO SCIENTIFIC LITERATURE (INTERNAL PAPERS)

- MSL 0020445. Sept 2007 Qi, Q., Moshiri, F., Back, S.; Wu X., Navarro, S., **Weaver, LM.;** Crowley, J.; Varagona, R.
- MSL 0020466 Aug 2006 Zhao, J.; Tran, M.; Thoma, R.; Manjunath, M.; Knapp, D.; **Weaver, LM.**; Varagona, R.
- MSL 0020464 Aug 2006 **Weaver, LM**.; Reynolds, T.; Glenn, K.; Varagona, R.
- MSL 20418 Aug 2006 D'Ordine, R.; Zhao, J.; Tian, K.; Winson, JL.; Back, SL.; Varagona, RJ.; **Weaver, LM**
- MSL 19964 Aug 2005 Ahrens, JE.; Abad, MS.; Eilers, RJ**.; Weaver, LM**.; Loida, PJ.
- MSL 19983 Aug 2005 Ahrens, JE.; **Weaver, LM.**; Loida, PJ.
- MSL 19829 May 2005 D'Ordine, RL.; Ream, JE.; **Weaver, LM**.
- MSL 19370. July 2004 D'Ordine, RL.; Ream, JE.; Gruys, KJ.; Varagona, RJ.; **Weaver, LM.**
- MSL 19395 July 2004 Kan, SZ.; Varagona, RJ.; Jacobsmeyer, D.; **Weaver, L.**
- MSL 18701. May 2003 **Weaver, LM**.; Li, YY.; Kraus, L.
- MSL 18965. Mar 2004. Back, S.; Zhao, J.; Reznick, B.; Varagona, M.; **Weaver, L**.
- MSL 18352 Jan 2003. Manjunath, M.; Rucker, M.; Shi, X.; Varagona, R.; contributors: Brown, W.; Brown, T.; Fabbri, B.; Gruys, K.; Jeong, S.; Luethy, M.; Mitsky, T.; Ness, L.; Reznick, B.; Stojsin, D.; Thorn, G.; Vance, I.; Wang, J.; **Weaver, L.**; Wen, L.; Winson, J.
- MSL 17512 June 2003 Vaduva, G.; Thai, K.; Wang, Q.; Kan, S.; Liang, J.; Ream, J.; Botwin, K.; Lewis, Y.; Brown, W.; Hill B.; Varagona, M., **Weaver, L**.; Mitsky, T.; Oulmassov, T.
- MSL 18395 Dec 2002 Winson, J.; Back, S.; Reznick, B.; **Weaver, LM**.

- MSL 15266 Mar 2001. Walkup, JA.; Loussaert, D.; **Weaver, LM**.; Miller, PW.
- MSL16300 Sept 1999. **Weaver, LM**.; Chott, RC.; CaJacob, C.