a. Scholarly Publications and Creative Activities of Significant Professional Stature*:
   1. Refereed Publications and Creative Activities (include “In Press” publications)

   Brents L.K., Medina-Bolivar F (*), Seely K.A., Nair V., Bratton S.M.,
   R.J., Prather P., Radomsinska-Pandya A.
   Natural prenylated resveratrol analogs, arachidin-1 and -3,
   demonstrate an improved glucuronidation profile and have affinity
   for cannabinoid receptors.
   Xenobiotica. 42 (pp. 139-156) 2012
   [*First two authors share first authorship]

   Cruz-Morales, S., Castaneda-Gomez, J., Figueroa-Gonzalez, G.,
   Mendoza-Garcia, A.D., Lorence, A., and Pereda-Miranda, R.
   Mammalian multidrug resistance lipopentasaccharide inhibitors
   from Ipomoea alba seeds.
   Journal of Natural Products, 75 (pp. 1603-1611) 2012

   Tools of the trade: Developing antibody-based detection
   capabilities for recombinant proteins. In A. Lorence (Ed.),
   Recombinant Gene Expression: Reviews and Protocols, Third

   Fang, Y., Yu, S., and Braley-Mullen, H.
   TGF-beta promotes proliferation of thyroid epithelial cells in IFN-
   gamma-/- mice by down-regulation of p21 and p27 via AKT
   pathway.
   American Journal of Pathology, 180(2) (pp. 650-660) 2012

   Ge, X., Green, S., Zhang, N., Sivakumar, G., and Xu, J.
   Eastern gamagrass as an alternative cellulosic feedstock for
   bioethanol production.
   Process Biochemistry, 47 (pp. 335-339) 2012

   Ge, X., and Xu, J.
   Cell-free protein synthesis as a promising expression system for
   recombinant proteins.
   Methods in Molecular Biology, 824 (pp. 565-578) 2012
Ge, X., Zhang, N., Phillips, G.C., and Xu, J.
Growing Lemna Minor in Agricultural Wastewater and Converting the Duckweed Biomass to Ethanol.
Bioresource Technology, 124(4) (pp. 485-488) 2012

Georgiev, M., Agostini, E., Ludwig-Müller, J., and Xu, J.
Genetically transformed roots: from plant disease to biotechnology
Trends in Biotechnology, 30(10) (pp. 528-537) 2012

Hood, E., Cramer, C.L., Medrano, G., and Xu, J.
Protein targeting: Strategic planning for optimizing protein products through plant biotechnology. In A. Altman and P.M. Hasegawa (Ed.)

Kayes, T., Fang, Y., Yu, S., Downey, E., Wang, S., and Braley-Mullen, H.
Agonistic anti-CD40 induces thyrocyte proliferation and promotes thyroid autoimmunity by increasing CD40 expression on thyroid epithelial cells.
Journal of Immunology (in press) 2013

Lorence, A. (Ed.)
Recombinant Gene Expression

Medrano, G., Dolan, M.C., Condori, J., Radin, D.N., and Cramer, C.L.
Quality assessment of recombinant proteins derived from plants. In A. Lorence (Ed.)
Recombinant Gene Expression

Triacylglyceride profiles of integumentary lipids isolated from three bat species determined by matrix-assisted laser desorption/ionization time-of-flight mass spectrometry.
Can. Journal of Zoology 90 (pp. 1117-1127) 2012

Prabhu B.M., Medina-Bolivar F., Condori J., Sivakumar G., Srivatsan M.
Neuroprotective effect of peanut hairy root extract (PHRE) against oxidative stress in PC12 derived neurons.
Journal of Medicinally Active Plants 1(4) (pp. 125-133) 2012
Sharma, A., Folch-Mallol, J.L., Cardoso-Taketa, A.T., Lorence, A., & Villarreal, M.L.
DNA barcoding of the Mexican sedative and anxiolytic plant
_Galphimia glauca._
Journal of Ethnopharmacology, 144 (pp. 371-378) 2012

Sivakumar, G., Xu, J., Thompson, R., Yang, Y., Randol-Smith, P., and Weathers, P.
Integrated green algal technology for bioremediation and biofuel.
Bioresoruce Technology, 107(9) (pp. 1-9) 2012

Vasu, P., Cameron, R.G., Savary, B.J.
Purification and characterization of a papaya (Carica papaya L.) pectin methylesterase isolated from a commercial papain preparation.
Food Chemistry 133 (pp. 366-372) 2012

Xu, J. and Kieliszewski, M.
A novel plant cell bioproduction platform for high-yield secretion of recombinant proteins.
Methods in Molecular Biology, 824 (pp. 483-500) 2012

Xu, J., Dolan, M.C., Medrano, G., Cramer, C.L., and Weathers, P.J.
Green Factory: Plants as bioproduction platforms for recombinant proteins.
Biotechnology Advances, 30(13) (pp. 1171-1184) 2012

Structural characteristics of pumpkin pectin extracted by microwave heating.
Journal of Food Science 77(11):C (pp. 1169-C1173) 2012

Yu, S., Ellis, J., Dunn, R., Kehry, M., and Braley-Mullen, H.
Transient depletion of B cells in young mice results in activation of regulatory T cells that inhibit development of autoimmune disease in adults.
International Immunology 24(4) (pp. 233-242) 2012

Yu, S., Fang, Y., Sharav, T., Sharp, G.C., and Braley-Mullen, H.
CD8+ T cells induce thyroid epithelial cell hyperplasia and fibrosis.
Journal of Immunology 186 (pp. 2655-2662) 2011

Yu, S., Fang, Y., Sharp, G.C., and Braley-Mullen, H.
Transgenic expression of TGF-beta on thyrocytes inhibits development of spontaneous autoimmune thyroiditis and increases regulatory T cells in thyroids of NOD.H-2h4 mice.
Journal of Immunology 184 (pp. 5352-5359) 2010
IL-17 induces expression of vascular cell adhesion molecule through signaling pathway of NF-kB, but not Akt1 and TAK1 in vascular smooth muscle cells.

2. Invited Chapters, Review Articles, Exhibits, etc.


3. Significant Non-referred Publications and Creative Activities (do not include abstracts)


Medina-Bolivar F, Yang T.
Method to increase the yield of products in plant material.
US Provisional Patent Application No. 61729659
Filed November 26, 2012

b. Scholarly and Creative Activity Presentations to Learned Forums:

Aboobucker, S.I., Suza, W.P. and Lorence, A.
Characterization of a functional Arabidopsis L-gulono-1,4-lactone oxidase (GLOase) in Nicotiana benthamiana.
3rd Annual Conference of the American Council for Medicinally Active Plants. 2012

Aboobucker, S.I., Suza, W.P. and Lorence, A.
Characterization of an Arabidopsis L-gulono-1,4-lactone oxidase (GulLO).
Plant Biotechnology Discussion Group.

Acosta, W., Ayala, J., Behrens, A., Bailey, J., Dolan, M.C., and Cramer, C.L.
Plant-made pharmaceutical proteins: Targeting enzyme bioproduction and delivery.

Acosta, W., Cramer, C.L. and Dolan, M.C.
Molecular Pharming: a renewable alternative for plant-based bioproduction of high value therapeutics.
NSF National EPSCoR Annual Conference. 2012

Acosta, W., Cramer, C.L., Dolan, M.C. and Ayala, J.
Plant-Made Pharmaceuticals RTB Fusions as a Novel Strategy for Delivering Lysosomal Enzyme Therapeutics into Mammalian Cells.
Create@STATE. Jonesboro, AR. April 5, 2012

Atwill R, Nopo-Olazabal L, Medina-Bolivar F.
Bioproduction and purification of prenylated resveratrol analogs from hairy root cultures of peanut.
International Congress on Natural Products Research. New York, NY. July 29-August 1, 2012 (poster)

Atwill R, Nopo-Olazabal L, and Medina-Bolivar F.
Purification of the prenylated resveratrol analogs arachidin-1 and arachidin-3 from hairy root cultures of peanut by high performance counter current chromatography.
Create@STATE. Jonesboro, AR. April 5, 2012 (poster)


Bailey, J., Cramer, C.L. and Acosta, W. Development of an In Vitro Assay to Evaluate Uptake of Human Glucocerebrosidase into Mammalian Cells. Create@STATE. Jonesboro, AR April 5, 2012


Cramer, C.L. Plant-based bioproduction of pharmaceutical proteins – pushing the 'medicinally active' envelope. Invited keynote speaker. 3rd Annual Conferences of American Council for Medicinally Active Plants and P3 Center Annual Research Symposium, Jonesboro, AR. 2012

Cramer, C.L. Plant-based bioproduction of pharmaceutical proteins: Using cross-disciplinary approaches from informatics to immunology. Invited lecturers, bioinformatics workshop, School of Mathematics, Shandong University, Jinan, China. 2012

Cramer, C.L. Plant-based bioproduction of pharmaceutical proteins: Using cross-disciplinary approaches from informatics to immunology. Invited seminar, School of Life Science, Shandong University, Jinan, China. 2012


Cramer, C.L. Teaching and research at an undergraduate university --- and how to market your discoveries. UAMS 12th Annual Career Day. 2012


18th North American Regional International Society for the Study of Xenobiotics (ISSX) Meeting. Dallas, TX. October 14-18, 2012 (poster)


Ganapathy, S. Gloriosa-made anti-cancer molecules. The 8th International Conference on Natural Products Research (ICNPR); Global Change, Natural Products and Human Health (ASP). 2012

Ganapathy, S., and Ky, P. Industrial technology to produce plant-based anticancer molecules. 3rd Annual Conference of American Council for Medicinally Active Plants. 2012


Jarrett, M., Ayala, J., Fergus, R., Cramer, C.L., and Dolan, M.C. Establishing the tools to explore the use of a plant-expressed nontoxic lectin, RTB, in targeting recombinant therapeutic protein delivery to animal cells. 2012 World Congress on In Vitro Biology (2012 SIVB)


Lorence, A. Engineering elevated vitamin C in plants to improve their nutritional content, growth, and tolerance to stress. 51st Annual Meeting of the Phytochemical Society of North America. 2012

Lorence, A. scanalyzer HTS, a powerful high throughput plant phenotyping platform. ASSET Management Team Meeting Report. 2012

Marsico, T., Bennet, B., Huss, M. and Medina-Bolivar, F. Recent advances in formal botanical education at Arkansas State University: An eye to the future. 3rd Annual Conference of the American Council for Medicinally Active Plants. Jonesboro, AR. May 22-25, 2012 (poster)


Marsh, Z., Nopo-Olazabal, L., Joshee, N., and Medina-Bolivar, F. Production of specialized metabolites in hairy root cultures of Scutellaria lateriflora treated with cyclodextrin and methyl jasmonate. Create @ State. Jonesboro, AR. April 5, 2012 (poster)


Medina-Bolivar, F. Hairy roots a source of unique medicinal compounds. University of Arkansas for Medical Sciences. Little Rock, Arkansas. November 9, 2012 (invited seminar)


Nopo-Olazabal, C., Khodakovskaya, M. and Medina-Bolivar, F. Expression of a mammalian polyphosphate 5-phosphatase in tomato hairy roots affects root growth and antioxidant levels. 3\textsuperscript{rd} Annual Conference of the American Council for Medicinally Active Plants. Jonesboro, AR. May 22-25, 2012 (poster)


Radin, J.A., Suza, W.P., Goggin, F.L. and Lorence, A. Effects of exogenously applied abscisic acid in modulating foliar ascorbate content in \textit{Arabidopsis} thaliana. Create@StAte, a Symposium of Research and Scholarship. 2012


Tatambhotla, S.V., Aboobucker, S.I., Suza, W.P., and Lorence, A. All four biosynthetic pathways leading to vitamin C formation are active in tomato. INBRE Research Conference. Fall 2012


Yactayo-Chang, J.P., Torres, R., Martin, J., Gaxiola, R. and Lorence, A. The Scanalyzer HTS, a powerful platform for non-destructive plant phenotyping. ABI 2012 Fall Symposium. Fayetteville, AR.


Yang, T., Marsh, Z., Nopo-Olazabal, L., Joshee, N. and Medina-Bolivar, F. Metabolic engineering and elicitation strategies to manipulate the levels of bioactive flavonoids in hairy roots of Scutellaria lateriflora. Arkansas Biosciences Institute Fall Research Symposium. Fayetteville, AR. October 23, 2012 (poster)

Zhai, B., Rivas, F., Connelly, M., Clark, J., Ferrand, M.I., Nopo L. and Medina-Bolivar F. Antimalarial evaluation of hairy root cultures of Bixa orellana. 3rd Annual Conference of the American Council for Medicinally Active Plants. Jonesboro, AR. May 22-25, 2012 (poster)


Zhang, N., Medina-Bolivar F, and Xu, J. Plant hairy roots as a unique platform to study plant hydroxyproline-O-glycosylation process. 3rd Annual Conference of the American Council for Medicinally Active Plants. Jonesboro, AR. May 22-25 (poster)

c. Extramural Funding for Research and Creative Activities:

Atwill, R. (student), Medina-Bolivar F. (PI; advisor)
Production of resveratrol and its prenylated analogs in 1 liter peanut hairy root cultures and their purification using high performance counter current chromatography
Arkansas Department of Higher Education
Student Undergraduate Research Fund (SURF)
$2,750
January 1, 2012-April 30, 2012

Cramer, C.L.
SURF: Mammalian Cell-Based Assessment of Enzyme Therapeutics
Jessica Bailey
Arkansas Science and Technology Authority
$4,000.
2012

Cramer, C.L., Project Director and ASU PI.
ASUNSF EPSCoR/AR ASSET P3 Center
October 1, 2012-September 30, 2013
$439,620

RTB-mediated delivery: Orchestrating antigen trafficking to enhance cell immunity.
National Institutes of Health R21
$374,000.
2012
Lorence, A.  
Vitamin C Screening and Phenotyping of Selected Rice Materials.  
Research Support Agreement, USDA ARS Dale Bumpers National Rice Research Center  
$2,2400  
2012

Marsh, Z. (student), Medina-Bolivar, F. (PI; advisor)  
Development of root cultures of *Veratrum californicum* for sustainable production of the antitumor alkaloid cyclopamine  
Arkansas Department of Higher Education.  
Student Undergraduate Research Fund (SURF)  
$4,000  
January 1, 2012-December 31, 2012

McClure, G. (ASTA), Cramer, C., Varadan, V. (UA, Fayetteville), and Mantooth, A. (UAF).  
Arkansas ASSET II.  
AR Science and Technology Authority (state match of EPSCoR grant)  
$4 M for 5 years  
2012  
$50,000-Year 3 funding to ASU (P3)

McClure, G. (ASTA), Cramer, C., Varadan, V. (UA, Fayetteville), and Mantooth, A. (UAF).  
Arkansas ASSET II.  
National Science Foundation EPSCoR Program  
$20M for 5 years  
2012  
$389,620-Year 3 funding to ASU (P3)

Medina-Bolivar, F. (PI)  
Root cultures of *Veratrum californicum* as a sustainable source of cyclopamine and related steroidal alkaloids – Feasibility Study  
Infinity Pharmaceuticals  
$ 72,271

Medina-Bolivar F. (PI)  
Root cultures of *Veratrum californicum* as a sustainable source of cyclopamine and related steroidal alkaloids  
Infinity Pharmaceuticals  
March 13, 2012-December 31, 2012  
$107,847 (Initial approved funding was $215,659 thru March 2013. Agency reduced grant by 50% and ended it on December 31, 2012).
Nirmal, J. (Fort Valley State Univ.), Prahlad, P. (Karmanos Cancer Inst. at Wayne State Univ.), Medina-Bolivarr, F. (Co-PI, ASU), Ellis, D. (USDA), Rimando, A. (USDA-ARS)
Germplasm conservation, anti-adipocytic and anticancer activity, and metabolic engineering in the genus Scutellaria
United States Department of Agriculture (USDA), Cooperative State Research, Education and Extension Service (CSREES), 1890 Capacity Building Grant, National Competitive Proposal
$455,589 (Multi-institutional Total Amount)
$89,170 (ASU)
September 1, 2011-August 31, 2014
$22,771

Radin, J.A., and Lorence, A.
The Interplay Between Ascorbic Acid and Abscisic Acid (ABA) in ABA Insensitive Arabidopsis Mutants
EPSCoR Fellowship Award, NSF EPCoR RII Grant, AR ASSET Initiative and ASTA
$4,000
2012

Savary, B.J. (PI), Xu, J. (Co-PI)
Thermostable enzyme technologies for reducing energy costs in pulp processing
Beet Sugar Development Foundation, Private.
$2,500
January 1, 2012-December 31, 2012

Savary, B.J. (Project Director, PI), Bouldin, J., Green, V.S., Humphrey, J.K., Xu, J.
MidSouth/Southeast Bioenergy Consortium
USDOE Biomass Office, Federal, Funded
$333,000.
September 1, 2011, to August 31, 2012

Physiological and Genetic Mechanisms Underlying Salt Tolerance in Rice Across Developmental Stages.
NSF-IOS-Plant Genome Research Program – 2066788
$2,035,509
March 1, 2013-February 28, 2016
$58,501

Xu, J.
Rapid Synthesis of Complex Therapeutic Proteins with Cell-Free System.
INBRE Summer Program
2012
$29,717
d. Professional Recognitions and Awards to Faculty, Staff and Students:

Bailey J.
SURF Award (Student Undergraduate Research Fellowship)
Arkansas Department of Higher Education
2012

Bailey, J.
First Place-Undergraduate Level
Create@STATE, Arkansas State University, Jonesboro, AR
April 5, 2012

Tovar, J.C. and Savary, B.J.
First Place STEM-Graduate Oral Presentation
Create@STATE, Arkansas State University, Jonesboro, AR
April 5, 2012