

Richard Smith Larson

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SUMMARY OF QUALIFICATIONS

- Accomplished academic administrator, educator, clinician, and scientific researcher, with career success leading academic, research and clinical program development, expansion, and promotion
 - Outstanding capacity to forge new opportunities and foster government, commercial, and academic collaborations
 - Adept in university planning, development, and management
 - Success record at faculty retention and recruitment while incorporating principles of inclusion and diversity
 - Deep expertise in obtaining, allocating, and managing multimillion-dollar funding sources
 - Nationally recognized as a thought- and opinion-leader, routinely serving in consulting and advising roles for organizations at the national, state, and local levels
 - Versatile leader, with hands-on experience in business planning and development for academic institution, non-profit organizations, and foundations
 - Extensive experience in ambassadorial roles
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EDUCATION, TRAINING AND CERTIFICATIONS

EDUCATION

1990 MD – Harvard Medical School

1990 PhD Immunology – Harvard University

1984 AB Chemistry with honors, summa cum laude
University of North Carolina – Chapel Hill
Morehead Scholarship

POST-GRADUATE AND SPECIALIZED TRAINING

2019 Harvard University Advanced Leadership Program (part-time sabbatical)

- 2004 (October) Harvard School of Public Health. "Management Training for Academic Physicians in Leadership Positions."
- 1994 – 1996 Fellow in Hematopathology
Vanderbilt University Medical Center
- 1993 – 1994 Resident in Clinical Pathology
Vanderbilt University Medical Center
- 1990 – 1993 Resident in Anatomic Pathology
Washington University/Barnes Hospital

HONORARY TITLES AND DEGREES

- 2020 Honorary Commander, Kirtland Air Force Base

BOARD CERTIFICATION

- 2014 American Board of Pathology, re-certification in Anatomic and Clinical Pathology
- 1994 American Board of Pathology, certification in Anatomic and Clinical Pathology

MEDICAL LICENSURE

- 1996 – Present New Mexico (96-92)

PROFESSIONAL APPOINTMENTS

EXECUTIVE APPOINTMENTS

- 2019-2020 Interim Chief Informatics Officer, UNM Health Sciences Center
2015-2016
- 2017 – Present UNM Health System Executive Committee
- 2012 – Present Executive Vice Chancellor, UNM Health Sciences Center
- 2009 – Present Vice Chancellor for Research, UNM Health Sciences Center (EVP and VP positions changed to Chancellor title in 2011)
- 2007 – 2009 Vice President for Translational Research, UNM Health Sciences Center
- 2006 – 2007 Associate Vice President for Research, UNM Health Sciences Center
- 2005 – 2012 Senior Associate Dean for Research, UNM School of Medicine

ACADEMIC APPOINTMENTS

- 2012 – 2015 NM Health Disparities Center Fellow
- 2006 – Present Professor (tenured), Pathology, University of New Mexico
- 2002 – 2006 Associate Professor of Pathology (tenured), University of New Mexico
- 1996 – 2002 Assistant Professor of Pathology, University of New Mexico

RESEARCH APPOINTMENTS

- 2002 – 2006 Hematologic Malignancy Program Director, UNM Cancer Center
- 2000 – 2002 Director, UNM Office of Biocomputing

CLINICAL APPOINTMENTS

- 2019 – Present Chairman, Board of Directors, TriCore Reference Laboratories
- 2015 – 2016
- 2006 – 2008
- 2002 – Present Member, Board of Directors, TriCore Reference Laboratories
- 2003 – 2013 Member, Finance Committee of the Board, TriCore Reference Laboratories
- 2002 – 2006 Chief, Division of Clinical Pathology
- 1998 – 2003 Chief of Clinical Operations, Pathology, University of New Mexico
- 1998 – 2003 Laboratory Director, University Hospital Rapid Response Lab, TriCore Reference Laboratories
- 1996 – 1999 Assistant Medical Director of Molecular Diagnostics, University of New Mexico
- 1996 – 1998 Section Director, Clinical Hematology Laboratory, University of New Mexico

EDUCATIONAL ADMINISTRATIVE POSITIONS

- 2000 – 2004 MD/PhD Admissions Committee, Member
- 1999 – 2005 Director of Hematopathology Fellowship Research Program, University of New Mexico
- 2000 Chair, Continuing Medical Education Committee for the College of American Pathologists
- 1998 – 2000 Vice-Chair, Program and Program Education Committee for the College of American Pathologists (plans National Meetings and Web- based learning programs)
- 1998 – 2000 Vice-Chair, Technology and Education Committee for the College of American Pathologists (awards pathology resident training awards)
- 1995 – 2001 Contributing editor to national resident In Service Exam

- 1987 Second Annual Massachusetts Medical Society Medical Student Research Symposium,
Chairperson
- 1986 First Annual Massachusetts Medical Society Medical Student Research Symposium, Chairperson

CORPORATE AND NON-PROFIT BOARDS

- 2017 – Present New Mexico Bioscience Authority, President and Chair, Board of Directors
- 2016 – Present EPSCoR/IDeA Coalition, Board of Directors
- 2015 – 2016 EPSCoR/IDeA Foundation, Board of Directors
- 2015 – Present Rhodes Group, Inc., Board of Directors
- 2014 – Present Innovate ABQ, Inc., Board of Directors
- 2014 – 2015 CleanSpot, Inc., Board of Directors
- 2013 – Present Sigma Xi, UNM Chapter Board of Directors
- 2010 – Present Science and Technology Corp, Board of Directors (Technology Transfer Company)
- 2008 – 2019 New Mexico Consortium, Board of Directors (National Lab – University Initiative)
- 2008 – 2010 National Center for Genome Resources, Board of Directors
- 2007 – Present NMBio (formerly New Mexico Biomedical Business Association), Board of Directors
- 2005 – Present Foundation of Cancer Services of New Mexico, Founder and President (foundation for 501c3)
- 2001 Co-Founder, Cancer Service of New Mexico (501c3 organization)
- 2001 – Present Cancer Services of New Mexico, Founder and Board of Directors
- 2001 – 2003 Cancer Services of New Mexico, Treasurer

HONORS AND AWARDS

- 2019 UNM Innovation Award (for patents issued)
- 2018 Nomination, Federal Laboratory Consortium Excellence in Technology Transfer Award (for
work with Sensor-Kinesis Corporation to develop Shear Horizontal Surface Acoustic Wave
Biosensor)
- 2017 UNM Innovation Award
- 2016 UNM Innovation Award
- 2015 UNM Innovation Award
- 2014 Albuquerque Convention and Visitors Bureau Award (for promotion of tourism and economic
growth)
- 2014 Institutional Science Promotion Video Award (NIH)
- 2014 UNM Innovation Award

2012	UNM Innovation Award
2011	Who's Who in Technology Award – Intel Corporation and New Mexico Business Weekly
2010	Top 100 Technologies in R&D Magazine
2006	UNM Innovation Award
2006	Chief Scientist Award for Excellence from the Defense Intelligence Agency for contribution to national defense
2004	UNM Innovation Award
2003	Spokesperson training award for College of American Pathologists
2002	Wells Fargo Award for Drug Discovery
2002	Preceptor Award for Student Mentorship
2002	Dean's Award of Distinction
2001	Lansky Award from the College of American Pathologists for leadership and contribution to field
2001	Manuscript chosen for Yearbook in Pathology and Laboratory Medicine
2001	Faculty Teaching Excellence Award
2001	Preceptor Award for Student Mentorship
2001	Dean's Award of Distinction
2000	University of New Mexico Regents' Lectureship (Permanent title and award for clinical research and educational contribution to the university)
2000 – 2003	American Cancer Society, national Designated Research Investigator for Coaches against Cancer and Shoot Hoops for Lymphoma (one individual per year)
2000	Dean's Award of Distinction
1999	Dean's Award of Distinction
1999	Nominated for UNM teaching award
1998	Dean's Award of Distinction
1994	ASIP travel award for molecular diagnosis in pathology course
1992 – 1993	National Research Service Award for Post-doctoral training
1986 – 1990	National Research Service Award for Pre-doctoral training
1985	Harvard Medical School Research Award for Medical Student
1980 – 1984	John Motley Morehead Scholarship
1984	Merck Index Award (given to top three science students at graduation)
1984	Summa cum laude
1984	Degree with honors in chemistry (based on research)
1983	Phi Beta Kappa
1981	CRC Chemistry Award (given to top freshman)
1981	Phi Beta Sigma (academic honor society)
1980 – 1984	All ACC Athlete (12 seasons, cross-country, indoor and outdoor track)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

NATIONAL COMMITTEES AND APPOINTMENTS

2016 – Present	EPSCoR/IDeA Coalition, Board of Directors
2016	White House-Sponsored "Medicine Responds to Addiction" Taskforce, Member
2015 – 2017	USU/APLU Executive Research Committee
2015 – 2016	EPSCoR/IDeA Foundation, Board of Directors
2015 – 2016	USU/APLU Biomedical Research Workforce Action Groups, Member
2013 – Present	USU, University Leadership Representative for UNM
2013 – 2016	Growth & Sustainability Workforce Sub-Committee, AAMC/USU Chair
2013 – 2016	AAMC Forum on Conflicts of Interest Steering Committee
2012 – 2016	AAMC Workforce Learning Collaborative

2010 – Present Children’s Oncology Group T-ALL Study Committee, Member
2007 – 2014 Vice President for Research Executive Planning Committee, AAHC
2005 – 2009 Advisory Council for Western Regional Center of Excellence for Biodefense
2004 – 2009 Served as ad hoc spokesperson for College of American Pathologists
2004 – 2008 External Advisory Board for Moffit Cancer Center
2001 – 2003 American Heart Association Nation Council on Cardiovascular Biology
2000 College of American Pathologists (CAP) Continuing Education Committee, Chair
1998 – 2000 CAP Program and Program Education Committee, Vice Chair
1998 – 2000 CAP Technology and Education Committee, Vice Chair
1997 CAP Future Technology Committee, Chair
1994 – 1997 CAP Committee on Future Technology
1988 – 1990 Massachusetts Medical Society (MMS), committee on long-term planning
1987 Second Annual MMS Medical Student Research Symposium, Chairperson
1986 First Annual MMS Medical Student Research Symposium, Chairperson

STATE AND MUNICIPAL COMMITTEES AND APPOINTMENTS

2016 – 2017 GrowBio (Albuquerque Biotechnology Development Committee), Chair
2013 – Present New Mexico Collaborative Research and Development Council
2012 – Present Mayor’s Council on City Development
2011 – Present Biomedical Research Institute of New Mexico, Member
2010 – 2014 NM Human Services Department Provider/Workforce/Delivery System Stakeholder Advisory Workgroup, Member
2010 – 2014 NM Human Services Department Health Care Information Technology Stakeholder Advisory Workgroup, Member
2005 – Present Academic Affiliation Partnership Council (UNM/VA Affiliation Group)
2005 Governor’s Task Force on Biotechnology Development in NM (BioTEP)
2004 Medical Commercialization Network, Member
2001 Mayor’s Council on Biotechnology Development in Albuquerque
1996 – 2000 Literacy Council of Albuquerque, Board Member

STUDY SECTIONS AND WORKSHOP APPOINTMENTS

2017 NIH Study Section, NCI Special Emphasis Panel (R01)
2016 NIH Study Section, NCI Program Project Meeting I (P01)
2014 NIH Study Section, NCI Program Project Meeting III (P01)
2013 Special Review Panel, Lymphatics in Health and Disease in the Digestive, Urinary, Cardiovascular and Pulmonary Systems
2013 NIGMS Council
2011 – 2014 Special Panel Review for CTSA Grants, Member
2008 – 2012 Special Emphasis Panel Review SPORE Grants, Member
2008 – Present Special Emphasis Panel Review NCI P01 Clinical Studies, Member
2007 – 2010 HHMI Review Panelist Research Training Fellowships
2006 – 2007 NIH Study Section, Tumor Microenvironment, Member
2003 – 2005 American Cancer Society: Leukemia, Immunology and Blood Cell Committee, Chair
2003 NCI Workshop on Leukemia Research
2002 – 2004 NCI Workshop on Bone Marrow Microenvironment
2001 American Cancer Society, Ad hoc Site Reviewer for Clinical Investigator Award
2000 – 2005 American Cancer Society; Leukemia, Immunology and Blood Cell Committee, Member
1997 – 2000 College of American Pathologist, Pathology Education Committee (Reviews Scholars Awards, Technology and Informatics grants)

CLINICAL AND TRANSLATIONAL SCIENCE AWARD RELATED COMMITTEES

- 2010 - Present Mountain West Research Consortium Executive Committee, Member
- 2010 – 2017 Mountain West Research Consortium Executive Committee, Founder and Chair
- 2010 – 2014 CTSA Consortium Executive Committee, Member
- 2010 – 2014 CTSA Consortium Steering Committee, Member
- 2010 – 2014 Strategic Goal 3 Committee, Co-Chair

PROFESSIONAL SOCIETIES, MEMBERSHIP

- 2015 – Present Greater Albuquerque Medical Society
- 2006 – Present Association for Academic Health Centers (AAHC)
- 2005 – Present AAMC GRAND
- 2001 – Present Children’s Oncology Group
- 1997 – 2008 American Association for Cancer Research (AACR)
- 1997 – 2002 Southwest Oncology Group Leukemia Committee and Leukemia Tumor Biology Committee
- 1997 – 1999 Association of Molecular Pathologists (AMP)
- 1995 – 2008 Society for Hematopathology
- 1994 – 2008 American Society for Hematology (ASH)
- 1994 – 2008 American Society for Investigative Pathology (ASIP)
- 1993 – Present College of American Pathologists (CAP)
- 1985 – 1990 Massachusetts Medical Society

PEER-REVIEW ACTIVITIES

Current and Previous Editorial Boards

- Frontiers for Young Minds
- Biomarkers
- American Journal of Clinical Pathology

Ad Hoc Reviewer for Peer-Reviewed Journals

- American Journal of Clinical Pathology
- Blood
- Journal of Biologic Chemistry
- Journal of Virology
- Human Pathology
- Journal of Nuclear Medicine
- American Journal of Physiology – Heart and Circulation
- Journal of Immunology
- Nature Biology

COMMUNITY SERVICE

- 2017 – Present Corporate Chair, American Lung Association Fight for Air Climb
- 2005 – Present Founder and President, Foundation of Cancer Services of New Mexico (foundation for 501c3)
- 2005 Governor’s Task Force on Biotechnology Development in NM (BioTEP)
- 2004 – 2009 Serve as ad hoc spokesperson for College of American Pathologists
- 2004 Medical Commercialization Network, Member
- 2001 Co-founder Cancer Service of New Mexico (501c3 organization)
- 2001 – Present Board Member, Cancer Services of New Mexico

2001 – 2003 Treasurer, Cancer Services of New Mexico
2001 Mayor’s Council on Biotechnology Development in Albuquerque
1996 – 2000 Board Member, Literacy Council of Albuquerque

My wife and I founded Cancer Services of New Mexico in 2001 to reduce cancer suffering in New Mexico. We are the only statewide non-profit organization that looks broadly at addressing gaps in cancer-related services while maintaining a 100% focus on New Mexico. We serve approximately 2000 cancer survivors and their families each year, free of charge. This is the largest organization of its type in the United States. We have programs that include:

- 1) Family Cancer Retreat. Twice each year, this free three-day educational retreat provides a group of adult cancer patients/survivors and their loved ones with tools and information they need to better manage the survival process. It is the largest general cancer education program in New Mexico, and, to our knowledge, is unique nationwide.
- 2) Legal and Paperwork Assistance Program. We run weekly “clinics” to assist cancer survivors with understanding their insurance and paperwork related to their care. This program has provided over \$5M in cancer care to patients over the last 4 years.
- 3) Family Cancer Resource Bags. Statewide distribution of free information kits that help newly diagnosed parents and their children aged 13 – 18 cope with the impact of cancer on their families.
- 4) Zoo Night for Kids with Cancer. A free evening of fun, sharing, and learning held each year for New Mexico’s current and former pediatric cancer patients and their families.
- 5) New Mexico Cancer Services Survey. First-ever statewide survey to determine cancer survivor perspective on how to improve cancer-related services in New Mexico.

I spun a foundation off of this organization in 2005 that is committed to fundraising for the parent CSNM organization. I am president of the foundation, which has a separate board of directors.

SCHOLARLY PUBLICATIONS AND WORK

BOOKS

LARSON RS (ed). *Bioinformatics and Drug Discovery*. Humana Press, first edition: London, 2005.

LARSON RS (ed). *Bioinformatics and Drug Discovery*. Humana Press, second edition: London, 2012.

LARSON RS, Oprea TI (eds). *Bioinformatics and Drug Discovery*. Humana Press, third edition: London, 2019.

ORIGINAL RESEARCH IN REFERRED JOURNALS

Wright SF, Berkowitz P, Deerfield D, Byrd PA, Olson D, **LARSON RS**, Hinn G, Koellher K, Hiskey RG. Chemical Modification of Bovine Prothrombin Fragment 1 in the presence of Tb^{3+} Ions. *J Biol Chem*, 261:10598-10604, 1985.

Sastre L, Roman J, Teplow D, Deyer W, Gee C, **LARSON RS**, Roberts T, Springer TA. A partial genomic DNA clone for the α subunit of the mouse complement receptor type 3 and cellular adhesion molecule Mac-1. *Proc Natl Acad Sci USA*, 83:5644-5648, 1986.

Sastre L, Roman J, Teplow D, Deyer W, Gee C, **LARSON RS**, Roberts T, Springer TA.

Proc Natl Acad Sci USA, 83:5644-5648, 1986.

Corbi AL, Miller L, O'Connor K, **LARSON RS**, Springer TA. cDNA cloning and complete primary structure of the α subunit of the leukocyte adhesion glycoprotein, 150,95. EMBO J, 6:4023-4028, 1987.

Corbi AL, **LARSON RS**, Kishimoto TK, Springer TA, and Morton CC. Chromosomal Location of the Genes Encoding the Leukocytic Adhesion Receptors LFA-1, Mac-1, and 150,95. Identification of a Gene Cluster Involved in Cell Adhesion. J Exp Med, 167:1597-1607, 1988.

Wang D, Liebowitz D, Wang F, Gregory C, Rickinson A, **LARSON RS**, Springer TA, Kieff E. Epstein-Barr Virus Latent Infection Membrane (LMP) Protein Alters Lymphocyte Morphology, Adhesion and Growth: Detection of the Amino Terminus Abolishes Activity. J Virology, 62:4173-4184, 1988.

LARSON RS, Corbi AL, Berman L, Springer TA. Primary Structure of the LFA-1 alpha Subunit: An Integrin with an Embedded Domain Defining a Protein Superfamily. J Cell Biol, 108:703-712, 1989.

Dustin ML, Garcia-Aguilar J, Hibbs M, **LARSON RS**, Staunton DE, Wardlaw A, Springer TA. Structure and Regulation of the Leukocyte Adhesion Receptor LFA-1 and its Counter-Receptors, ICAM-1 and ICAM-2. Proceedings of Cold Spring Harbor Quant Biol, 753-765, 1989.

Kishimoto TK, **LARSON RS**, Dustin JL, Corbi AL, Staunton DE, Springer TA. The Leukocyte Integrins. Advances in Immunology, 46:149-182, 1989.

LARSON RS, Hibbs M, Corbi AL, Luther E, Garcia-Aguilar J, Springer TA. The subunit specificity of CD11a/18, CD11b, and CD11c panels of antibodies. Leukocyte Typing IV, 566-570, 1990.

LARSON RS, Hibbs M, Springer TA. The leukocyte integrin LFA-1 reconstituted cDNA transfection in a nonhematopoietic cell line is functionally active and not transiently regulated. Cell Regulation, (c. Mol Biol of Cell) 1:359-367, 1990.

LARSON RS. LFA-1 alpha subunit: Complete primary structure with transient expression and functional studies. Thesis, 1990.

LARSON RS, Haskell E, Perez J. Pathogenesis of a Double (Septal and Free Wall) Rupture. Cardio Pathol, 1:199-204, 1992.

LARSON RS, Wick MR. Primary Mucoepidermoid Carcinoma of the Thyroid: Diagnosed by Fine-Needle Aspiration Biopsy. Diag Cytopath, 9:438-443, 1993.

LARSON RS, Rudloff M, Liapis H, Davila R, Manes JL, Kissane JM. The Ivemark syndrome: An uncommon cystic renal lesion with syndromic associations. Ped Nephrol, 9:594-598, 1995.

Weinstock LB, **LARSON RS**, Stahl DS, Fleshamn JW. Diffuse Microscopic Angiodysplasia: A Previously Unreported Variant of Angiodysplasia. Dis Colon and Rectum, 38:428-432, 1995.

LARSON RS, McCurley TL. CD4 Predicts Nonlymphocytic Lineage in Acute Leukemia: Insights from Analysis of 125 Cases Using Two-Color Flow Cytometry. Am J Clin Path, 104:204-211, 1995.

LARSON RS, Butler M. Use of Fluorescence in Situ Hybridization (FISH) in the Diagnosis of DiGeorge Syndrome and Related Diseases. Diag Mole Path, 4:274-279, 1995.

LARSON RS, McCurley TL. Relationship of CD4 and CD34 expression in acute leukemia. Blood, 85:3768-3769, 1995.

LARSON RS, Scott MA, McCurley TL, Vnencek-Jones C. Microsatellite analysis of post transplant lymphoproliferative disorders: Determination of host/donor origin and identification of a putative lymphomagenic mechanism. Cancer Res, 56:4378-4381, 1996.

LARSON RS, Sukpanichnant S, Greer JP, Cousar JB, Collins RD. The Spectrum of Multiple Myeloma: Diagnostic and Biologic Implications. Hum Pathol, 28:1336-1347, 1997.

LARSON RS, Manning S, Macon WR, Vnencek-Jones C. Microsatellite Instability in Natural Killer Cell-like T-Cell Lymphomas in Immunocompromised and Immunocompetent Individuals. Letter. Blood, 89:1114-1115, 1997.

Wagner CR, Ballato G, Akanni AO, McIntee EJ, **LARSON RS**, Chang SL, Abul-Hajj YJ. Potent Growth Inhibitory Activity of Zidovudine (AZT) on Cultured Human Breast Cancer Cells and Rat Mammary Tumors. Cancer Research, 57:2341-23445, 1997.

LARSON RS, Brown DC, Sklar LA. Retinoic acid induces aggregation of the acute promyelocytic leukemia cell line NB-4 that is mediated by LFA-1 and ICAM-2. Blood, 90:2747-2756, 1997.

Hodges KB, **LARSON RS**, Butler M. Increased Incidence of Chromosomal Fragile Sites in Mentally Retarded Males with Seizures and on Diphenylhydantoin Therapy. Ann Clin Lab Sci, 28:293-298, 1998.

Hodges KB, Vnencek-Jones C, **LARSON RS**, Kinney MC. Rarity of Genomic Instability in Pathogenesis of Classical Anaplastic Large Cell Lymphoma. Hum Pathol, 30:173-177, 1999.

Brown DC, Tsuji H, **LARSON RS**. All-*trans* retinoic acid differentially regulates adhesion mechanism and transmigration on the acute promyelocytic cell NB-4 under physiologic flow. Br J Haematology, 107:86-98, 1999.

Luther LM, Lakey D, **LARSON RS**, Haas D. Utility of Bone Marrow Biopsy for Rapid Diagnosis of Febrile Illnesses in Patients with Human Immunodeficiency Virus Infection. Southern Med Journal, 93:692-7, 2000.

Rimsza LM, **LARSON RS**, Winter SS, Foucar K, Chong YY, Garner K, Leith CP. Benign Hematogone-Rich Lymphoid Proliferations Can Be Distinguished From B-Lineage Acute Lymphoblastic Leukemia by Integration of Morphology, Immunophenotype, Adhesion Molecule Expression, and Architectural Features. Amer J Clin Path, 114:66-75, 2000.

Winter SS, Sweatman JJ, **LARSON RS**. Improved Quantification of Cell Survival on Stromal Cell Monolayers by Flow Cytometric Analysis. Cytometry, 40:26-31, 2000.

Tallman MS, Andersen JW, Schiffer CA, Appelbaum FR, Feusner JH, Ogden A, Shepherd C, Rowe JM, **LARSON RS**, Wiernik PH. Clinical description of 44 patients with acute promyelocytic leukemia who developed retinoic acid syndrome. Blood, 95:90-95, 2000.

Ledford M, Friedman KD, Hessner MJ, Moehlenkamp C, Williams TM, **LARSON RS**. A Multi-Site Study for Detection of the Factor V (Leiden) Mutation from Genomic DNA Using a Homogenous Invader Microtiter Plate FRET Assay. J Mol Diag, 2:97-104, 2000.

Evans HC, Burks E, Viswanatha D, **LARSON RS**. Histologic Appearance and Immunohistochemistry of T-Large Granular Lymphoproliferative Disease in the Bone Marrow. Hum Pathol, 31:1266-1273, 2000.

Edwards B, Curry MS, Tsuji H, **LARSON RS**, Brown DC, Sklar LA. Expression of P-selectin at Low Site Density Promotes Selective Recruitment of Eosinophils Over Neutrophils. J Immunol, 165:404-410, 2000.

Winter SS, Sweatman JJ, Hart A, Rhoades TH, **LARSON RS**. Enhanced T-lineage acute lymphoblastic leukemia cell survival on bone marrow stroma requires involvement of LFA-1 and ICAM-1. Br J Hematol, 115:862-871, 2001.

Koster F, Foucar K, Hjelle B, Chong YY, **LARSON RS**, McCake M. Presumptive Diagnosis of Hantavirus Cardiopulmonary Syndrome by Routine Complete Blood Count and Blood Smear Review. Am J Clin Path, 116:665-672, 2001.

Shannon J, Brown DC, Silva M, **LARSON RS**. Novel cyclic peptide inhibits intercellular adhesion molecule-1 mediated cell aggregation. J Pept Res, 58:140-150, 2001.

Chigaev A, Blenc AM, Braaten JV, Kumaraswamy N, Prosnitz E, **LARSON RS**, Sklar LA. Real-time Analysis of the Affinity Regulation of VLA-4. J Biol Chem, 276:48670-48678, 2001.

DiVietro JA, Smith MJ, Smith BRE, Petruzelli L, **LARSON RS**, Lawrence MB. Immobilized IL-8 Triggers Progressive Activation of Neutrophils Rolling in Vitro on P-selectin and ICAM-1. J Immunol, 167:351-360, 2001.

Brown DC, **LARSON RS**. Improvements to parallel flow chambers to reduce reagent and cellular requirements. Immunology, 2:9-14, 2001.

Kepley CL, Andrews RP, Brown DC, Chigaev A, Sklar LA, Oliver JM, **LARSON RS**. Regulation of human basophil adhesion to endothelium under flow conditions: Different very late antigen 4 regulation on umbilical cord blood-derived and peripheral blood basophils. J Allergy and Clinical Immunol, 110(3):469-475, 2002. [PMID: 12209096]

Winter SS, Sweatman JJ, Shuster JJ, Link MP, Amylon M, Pullen J, Camitta BM, **LARSON RS**. Bone marrow stroma-supported culture of t-lineage acute lymphoblastic leukemic cells predicts treatment outcome in children: a pediatric oncology group study. Leukemia, 16:1121-1126, 2002.

Blenc AM, Chigaev A, Sklar LA, **LARSON RS**. VLA-4 affinity on precursor B-ALL cells inversely correlates with number of circulating cells and DNA ploidy. Leukemia, 17:21-4, 2003.

Sillerud LO, Burks E, Brown DC, **LARSON RS**. NMR-derived model of interconverting conformations of an ICAM-1 inhibitory cyclic-nanopeptide. J Pept Research, 62:97-116, 2003.

Buranda T, Huang J, Ramarao GV, Ista LK, **LARSON RS**, Ward TL, Sklar LA, Lopez GP. Biomimetic Molecular Assemblies on Glass and Mesoporous Silica Microbeads for Biotechnology. Langmuir, 19:1654-1663, 2003.

Merchant SH, Gurule DM, **LARSON RS**. Amelioration of ischemia-reperfusion injury with cyclic peptide blockade of ICAM-1. Am J Phys-Heart and Circ, 284(4):H1260-H1268, 2003. [PMID:12595290]

Chigaev A, Zwartz G, Graves SW, Dwyer DC, Tsuji H, Foutz TD, Edwards BS, Prosnitz ER, **LARSON RS**, Sklar LA. $\alpha 4\beta 1$ Integrin Affinity Changes Govern Cell Adhesion. J Biol Chem, 10:1074, 2003. [PMID:12844491]

Zwartz G, Chigaev A, Foutz R, **LARSON RS**, Posner R, Sklar LA. Relationship Between Molecular and Cellular Dissociation Rates for VLA-4/VCAM-1 Interaction in the Absence of Shear Stress. Biophysical J 86(2):1243-1252, 2004. [PMCID:PMC1303916]

Churchwell CJ, Rintoul MD, Martin S, Visco DP, Kotu A, Brown DC, Sillerud LO, **LARSON RS**. The Signature Molecule Descriptor: Inverse Quantitative Structure-Activity Relationship of ICAM-1 Inhibitory Peptides. J Mol Model and Design, 22(4):263-273, 2004. [PMID:15177078]

Sklar LA, Tsuji J, Edwards B, **LARSON RS**, Schuyler M. Eosinophil traffic in the circulation following allergen challenge. Eur J Allergy Clin Immunol, 59:596-605, 2004.

Sillerud LO, Burks E, Brown MW, Wester MJ, Brown DC, **LARSON RS**. NMR solution of a potent peptide inhibitor of integrin-based cell adhesion produced by homologous amino acid substitution. J Pept Res, 64:1-14, 2004.

Sillerud LO, **LARSON RS**. Design and Structure of Peptide and Peptidomimetic Antagonists of protein-Protein Interaction. Current Protein and Peptide Science, 6(2):151-169, 2005. [PMID:15853652]

LARSON RS, Davis T, Bologna C, Semenuk G, Vijayan A, Li Y, Oprea T, Chigaev A, Wagner CR, Sklar LA. Dissociation of I Domain and Global Conformational Changes in LFA-1: Refinement of Small Molecule-I Domain Structure-Activity Relationships. Biochemistry, 44(11):4322-4331, 2005. [PMID:15766261]

LARSON RS, Brown DC, Ye C, Hjelle B. Peptide Antagonists of Sin Nombre and Hantaan Virus Entry Through $\beta 3$ Integrin Receptor. J Virol, 79(12):7319-7326, 2005. [PMCID:PMC1143646]

Reichard KK, Burks E, Foucar K, Wilson C, Viswanatha D, Hozier JC, **LARSON RS**. CD4(+) CD56(+) Lineage-Negative Malignancies are Rare Tumors of Plasmacytoid Dendritic Cells. Am J Surg Path, 29(10):1274-1283, 2005. [PMID:16160468]

Palomero T, Odom DT, O'Neil J, Ferrando AA, Margolin A, Neuberg DS, Winter SS, **LARSON RS**, Young RA, Look AT. Transcriptional Regulatory Networks Downstream of TAL1/SCL in T-Cell Acute Lymphoblastic Leukemia. Blood, 108(3):986-92, 2006. [PMCID:PMC1895859]

Poria RB, Norenberg JP, Wagner CR, Arterburn JB, **LARSON RS**. Characterization of a Radiolabeled Small molecule Targeting Leukocyte Function-Associated Antigen-1 Expression in Lymphoma and Leukemia. Cancer Biotherapy and Radiopharmaceuticals, 21(5):418-426, 2006. [PMID:17105416]

Flynn ER, Bryant HC, Bergemann C, **LARSON RS**, Lovato DM, Segatskov D. Use of a SQUID array to detect T-Cells with magnetic nanoparticles in determining transplant rejection. J Magnetism and Magnetic Materials, 311:429-435, 2007. [PMCID:PMC2139906]

Winter SS, Jiang Z, Khawaja HM, Griffin T, Devidas M, Asselin B, **LARSON RS**. Identification of Genomic Classifiers that Distinguish Induction Failure in T-lineage Acute Lymphoblastic Leukemia: A Children's Oncology Group Study. Blood, 110(5):1429-1438, 2007. [PMCID:PMC1975833]

Bryant HC, Segatskov DA, Lovato DM, Adolphi N, **LARSON RS**, Flynn ER. Magnetic needles and supermagnetic cells. Phys Med Biol, 52(14):4009-4025, 2007. [PMCID:PMC2041887]

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Detection of Bioagents Using a Shear Horizontal Surface Acoustic Wave Biosensor
Continuation of US Patent 8,709,791
- 2016 US Patent Application 15/214,921
Norenberg JP, **LARSON RS**
Non-Invasive Diagnostic Agents of Cancer and Methods of Diagnosing Cancer, Especially Leukemia and Lymphoma
Divisional of US Patent 8,097,237
- 2014 US Patent 10,031,135 B2
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Divisional of US Patent 8,709,791
- 2014 US Patent 9,546,186 B2
Norenberg JP, **LARSON RS**
Non-Invasive Diagnostic Agents of Cancer and Methods of Diagnosing Cancer, Especially Leukemia and Lymphoma
Divisional of US Patent 8,834,838
- 2014 US Patent Application 14/587,925
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Selective Efflux Inhibitors and Related Pharmaceutical Compositions and Methods of Treatment
- 2013 US Patent 8,834,838 B2
Norenberg JP, **LARSON RS**
Non-Invasive Diagnostic Agents of Cancer and Methods of Diagnosing Cancer, Especially Leukemia and Lymphoma
Divisional of US Patent 8,435,489 B2
- 2012 US Patent 9,056,111 B1
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Selective Efflux Inhibitors and Related Pharmaceutical Compositions and Methods of Treatment
- 2011 US Patent 8,435,489 B2
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Non-Invasive Diagnostic Agents of Cancer and Methods of Diagnosing Cancer, Especially Leukemia and Lymphoma
Divisional of US Patent 8,097,237

- 2008 US Patent 8,709,791 B2
LARSON RS, Hjelle B, Hall PR, Brown DC, Biosffi M, Brozik SM, Branch DW, Edwards TL, Wheeler D
Detection of Bioagents Using a Shear Horizontal Surface Acoustic Wave Biosensor
- 2008 US Patent Application 12/315,132
LARSON RS, Sklar LA, Edwards BS, Ivnitski-Steele ID, Oprea TI, Lovato DM, Khawaja HM, Winter SS, Young SM
Compounds and Methods for the Selective Inhibition of ABCB1, ABCC1 and ABCG2 Transporters and the Treatment of Cancers, Especially Drug Resistant Cancers and High Throughput Flow Cytometry Assay to Detect Selective Inhibitors
- 2006 US Patent 8,097,237 B2
Norenberg JP, **LARSON RS**
Non-Invasive Diagnostic Agents of Cancer and Methods of Diagnosing Cancer, Especially Leukemia and Lymphoma
- 2005 US Patent 7,309,316 B1
Flynn ER, **LARSON R**
Magnetic Needle Biopsy
- 2004 US Patent Application 10/886,407
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Tertiary Structures of ICAM-1/LFA-1 Modulators
- 2003 US Patent 6,881,747 B2
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Small Molecules for Inhibition of Function and Drug Delivery to Leukocytes
- 2001 US Patent 6,630,447 B2
LARSON RS
Peptide Inhibitors of LFA-1/ICAM-1 Interaction
Continuation-in-part of US Patent 6,649,592
- 2000 US Patent 6,649,592 B1
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Peptide Inhibitors of LFA-1/ICAM-1 Interaction

PREVIOUS PATENTS (PROVISIONAL or RELATED)

- 2016 US Patent Application 15/147,648
LARSON RS, Sklar LA, Edwards BS, Strouse JJ, Ivnitski-Steele I, Khawaja HM, Ricci JW, Aube J, Golden JE, Yao T, Weiner WS, Schroeder CE
Selective Efflux Inhibitors and Related Pharmaceutical Compositions and Methods of Treatment
- 2012 US Patent Provisional Application 61/680,899
Selective ATP-Binding Cassette Sub-family G Member 2 Efflux Inhibitor Revealed Via High-Throughput Flow Cytometry
Established priority claims for US Patent 9,056,111 B1 and Applications 14/587,925 and 15/147,648

- 2011 US Patent Provisional Application 61/537,199
Selective Efflux Inhibitors and Related Pharmaceutical Compositions and Methods of Treatment
Established priority claims for US Patent 9,056,111 B1 and Applications 14/587,925 and
15/147,648
- 2009 US Patent SN 61/205,211
Cyclic Peptides for the Inhibition of Andes Virus Infections
- 2008 US Patent SN 61/205,246
Linear Peptide Inhibitors of Hantavirus Infection
- 2008 US Patent SN 61/189,849
Small Molecule Inhibitors of Hantavirus Infection
- 2008 US Provisional Application 61/131,214
Novel ABCB1 Inhibitors
Established priority claim for US Patent Application 12/315,132
- 2008 US Provisional Application 61/124,377
High Throughput Flow Cytometry Assay to Detect Selective Inhibitors of ABCB1, ABCC1 and
ABCG2 Transporters
Established priority claim for US Patent Application 12/315,132
- 2007 US Patent SN 60/900,417
Peptides that Bind and Inhibit Sin Nombre Virus
- 2007 US Provisional Application 61/004,342
Compounds and Methods for the Inhibition of ABCB1 and the Treatment of Cancers
Established priority claim for US Patent Application 12/315,132
- 2007 US Provisional Application 61/009,656
Established priority claim for US Patent 8,709,791 B2
- 2007 US Provisional Application 60/926,827
Established priority claim for US Patent 8,709,791 B2
- 2007 US Provisional Application 60/900,416
Ligand Based Biosensor for Detection of Microbes
Established priority claim for US Patent 8,709,791 B2 and Application 14/172,429
- 2007 US Patent SN 60/880,309
Compounds and Methods for the Inhibition of ABCB1 and the Treatment of Cancers
- 2006 US Patent SN 60/858,080
Inhibitors of ICAM-1 and Methods of Use
- 2005 US Provisional Application 60/710,665
Established priority claim for US Patents 8,097,237 B2, 8,435,489 B2 and 8,834,838 B2,
and Application 15/214,921

2004 US Provisional Application 60/549,501
Magnetic Needle Biopsy
Established priority claim for US Patent 7,309,316 B1

2003 US Patent Application 10/615,479
Peptide Inhibitors of LFA-1/ICAM-1 Interaction
Continuation-in-part of US Patent 6,649,592 B1

2003 US Provisional Application 60/495,590
Established priority claim for US Patent Application 10/886,407

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Established priority claim for US Patent Application 10/886,407

2002 US Provisional Application 60/378,536
Drug Discovery Systems and Methods and Compounds for Drug Delivery
Established priority claim for US Patent 6,881,747 B2

1998 WO Patent Application PCT/US1998/009212
Inhibition of LFA-1/ICAM-2 Dependent Leukemic Cell Aggregation

1998 US Patent Application 09/424,190
Inhibition of LFA-1/ICAM-2 Dependent Aggregation

1990 US Patent Application 08/739,032 Cloning of LFA-1 cDNA

GRANT FUNDING

CURRENT

Title: University of New Mexico Clinical and Translational Science Center
PI: Richard Larson
Agency: NIH/NCATS **UL1TR001449**
Period: 7/1/2020 – 6/30/2025 Total Award: ~\$23,000,000

Title: NCATS Accrual to Clinical Trials (ACT) Project
PI: Steven Reis/UNM Subcontract PI Richard Larson
Agency: NIH/NCATS **UL1TR001857-05S1**
Period: 6/1/2020 – 5/31/2021 Total Award: \$37,875

Title: Developing Infrastructure and Harmonized Metrics to Study the Impact of Opioid ECHO Programs
PI: Richard Larson/Co-I Sanjeev Arora
Agency: NIH/NCATS **UL1TR002538**
Period: 3/1/2020 – 2/28/2021 Total Award: \$155,587

Title: Biomedical Research Facility
PI: Richard Larson
Agency: NIH/ORIP **C06OD028370**
Period: 10/1/2019 – 9/30/2024 Total Award: \$4,000,000

Title: Clinical and Translational Research Infrastructure Network IDeA-CTR
Clinical Research Design, Epidemiology, and Biostatistics Core
PI: Parvesh Kumar/UNM Subcontract PI Richard Larson
Agency: NIH/NIGMS **U54GM104944**
Period: 8/8/2018 – 6/30/2023 Total Award: \$19,686,542

PAST GRANT FUNDING

Title: University of New Mexico Clinical and Translational Science Center
PI: Richard Larson
Agency: NIH/NCATS **UL1TR001449**
Period: 8/14/2015 – 6/30/2020 Total Award: \$18,038,634

Title: University of New Mexico Clinical and Translational Science Center
PI: Matthew Campen/Co-I Richard Larson
Agency: NIH/NCATS **KL2TR001448**
Period: 8/14/2015 – 6/30/2020 Total Award: \$1,628,164

Title: NCATS Accrual to Clinical Trials (ACT) Project
PI: Steven Reis/UNM Subcontract PI Richard Larson
Agency: NIH/NCATS **UL1TR001857-03S1**
Period: 5/1/2018 – 6/30/2020 Total Award: \$151,500

Title: Advanced Biomanufacturing of the Bone-Ligament Interface
PI: Richard Larson/Co-I Eric Prossnitz
Agency: NIH/NCATS **UL1TR001449-04S1**
Period: 8/3/2018 – 3/31/2020 Total Award: \$148,964

Title: Mechanisms of Immunotoxicity Produced by Uranium, Arsenic, and Combined Exposures
PI: Richard Larson/Co-I Scott Burchiel
Agency: NIH/NCRR **UL1TR001449-02S2**
Period: 8/15/2016 – 3/31/2020 Total Award: \$155,249

Title: Collaboration to Enhance Naloxone Dispensing in Rural and Underserved Areas (CONSIDER)
PI: Richard Larson/Co-I Ludmila Bakhireva
Agency: NIH/NCATS **UL1TR001449-04S2**
Period: 7/1/2018 – 3/31/2019 Total Award: \$298,963

Title: Biomarker-Based Incidence Estimation of Hepatitis C Infection in Young Adult Injection Drug Users
PI: Richard Larson/Co-I Kimberly Page
Agency: NIH/NCRR **UL1TR001449-02S1**
Period: 8/15/2016 – 3/31/2019 Total Award: \$187,246

Title: Clinical and Translational Research Infrastructure Network IDeA-CTR
Clinical Research Design, Epidemiology, and Biostatistics Core
PI: Parvesh Kumar/UNM Subcontract PI Richard Larson
Agency: NIH/NIGMS **U54GM104944**
Period: 9/15/2013 – 6/30/2018 Total Award: \$19,915,508

Title: Developing a Workforce to Improve Health and Reduce Disparities
 PI: Paul Roth/ Co-PIs Richard Larson, Art Kaufman
 Agency: NIH/NICHD **U24MD006960**
 Association of American Medical Colleges (AAMC)
 Period: 1/1/2013 – 6/30/2017 Total Award: \$412,349

Title: HOPE Initiative Strategic Plan Developpment
 PI: Ryan Cangioli/Co-Investigator Richard Larson
 Agency: DOJ **DJJ-17P-USA51-0028**
 Period: 1/4/2017 – 5/1/2017 Total Award: \$25,000

Title: SAW Sensor Technology Phases I and II
 PI: Richard Larson
 Agency: Sensor-Kinesis Corporation
 Period: 3/1/2015 – 3/31/2017 Total Award: \$548,594

Title: IRB Reliance Supplement
 PI: Alan Green/Co-I Richard Larson
 Agency: NIH/NCATS **UL1TR001086-02S2**
 Period: 9/20/2014 – 4/30/2015 Total Award: \$129,960

Title: University of New Mexico Clinical and Translational Science Center
 PI: Richard Larson
 Agency: NIH/NCRR **UL1RR031977**
 NIH/NCATS **UL1TR000041**
 Period: 7/1/2010 – 3/31/2015 Total Award: \$18,608,568

Title: University of New Mexico Clinical and Translational Science Center
 PI: Richard Larson
 Agency: NIH/NCRR **KL2RR031976**
 NIH/NCATS **KL2TR000089**
 Period: 7/1/2010 – 3/31/2015 Total Award: \$1,522,856

Title: Enhancing Clinical Research Professionals' Training and Qualifications
 PI: Richard Larson/Co-I Corey Ford
 Agency: NIH/NCATS **UL1TR000041-05S1**
 Period: 9/6/2014 – 3/5/2015 Total Award: \$111,529

Title: Clinical Trial to Validate Clinical Use of Nanoparticles
 PI: Richard Larson
 Agency: Senior Scientific
 Period: 6/1/2011 – 9/30/2014 Total Annual Award: \$270,000

Title: UNM HSC Prediabetes Center
 PI: Richard Larson
 Agency: CDC Division of Diabetes, NCCDPHP, DDT/ **1H75DP002861-01**
 Period: 9/1/2010 – 8/31/2013 Total Award: \$600,000

Title: Co-Registered Vibrometry and Imaging: A Combined Synthetic-Aperture Rader and Fractional Fourier Transform Approach
PI: Majeed Hyatt/Richard Larson
Agency: NSF **IIS-0813747**
Period: 9/2009 – 7/31/2012 Total Award: \$600,000

Title: Biomagnetic In-Vivo Imaging of Ovarian Cancer (Phase 2)
PI: Richard Larson on SBIR subcontract
Agency: NIH **1R44CA123785**
Period: 5/11/2009 – 4/30/2012 Total Annual Award: \$336,044
This project focuses on producing nanoparticles coupled to ligands for bindings to cells.

Title: University of New Mexico Clinical and Translational Science Center Supplement
PI: Richard Larson
Agency: NIH/NCRR **UL1RR031977-02S2**
Period: 9/1/2011 – 3/31/2012 Total Award: \$303,740

Title: Use of Nanoparticles in a Magnetic Needle Biopsy (Phase 2)
PI: Richard Larson on SBIR subcontract
Agency: NIH **2R44CA105742**
Period: 4/1/2008 – 3/31/2012 Total Annual Award: \$478,739
This project focuses on the use of nanoparticles in a magnetic biopsy needle.

Title: Microenvironmental Mechanisms of Leukemia Cell Survival and Patient Prognosis
PI: Richard Larson
Agency: NIH **5RO1CA114589-05**
Period: 4/1/2005 – 2/28/2012 Total Annual Award: \$422,145
This project focuses on BM stoma supported growth of T-ALL cells and gene microarray analysis and identifies novel prognostic markers and new therapeutic targets.

Title: Force Conformation and Affinity in VLA-4 and LFA-1 Adhesion
PI: Sklar Co PI: Richard Larson
Agency: NIH **2RO1HL081062**
Period: 8/1/2007 – 6/31/2011 Total Annual Award: \$491,916

Title: Point-of-Care Multiplex Pathogen Detection by Surface Acoustic Wave Biosensors
PI: Richard Larson
Agency: NIH/NIAID **U54EB007959-03**
Period: 4/1/2009 – 3/31/2011 Total Annual Award: \$225,000
This project focuses on the development of a miniature, portable, autonomous, near-real-time, multi-sensor detector system for bioagents.

Title: General Clinical Research Center
PI: Richard Larson
Agency: NIH/NCRR **5MO1RR000997**
Period: 12/1/2005 – 11/30/2010 Total Annual Award: \$3,084,421

Title: Multiplex Screening for ABC Transporter Inhibitors
PI: Richard Larson
Agency: NIH **1R03MH081228**
Period: 10/1/2007 – 9/30/2010 Total Annual Award: \$25,000
This project focused on screening for ABCB1 inhibitors in a developed flow cytometry based assay.

Title: Biomagnetic Sensor for Detecting Breast Cancer (Phase 2)
PI: Richard Larson SBIR subcontract
Agency: NIH **2R44CA0965154**
Period: 9/1/2007 – 8/31/2010 Total Annual Award: \$238,000
This project focused on the use of nanoparticles in a magnetic biopsy needle.

Title: Biomagnetic Determination of Transplant Rejection (Phase 2)
PI: Richard Larson on SBIR subcontract
Agency: NIH **2R44AI6676**
Period: 8/1/2007 – 7/31/2010 Total Award: \$99,690
This project focused on the use of nanoparticles in detection of transplant rejection.

Title: Agents for Specific NMR and SQUID Imaging of Prostate Cancer
PI: Sillerud Co PI: Richard Larson
Agency: NIH **1R01CA123194**
Period: 7/21/2007 – 5/31/2010 Total Annual Award: \$493,056

Title: Clandestine Genetic Sampling and Informatics for Intelligence Application
PI: Richard Larson
Agency: APL – JHU subcontract
Period: 4/7/2008 – 7/31/2009 Total Annual Award: \$40,000
This project focused on the isolation of human DNA and RNA.

Title: Integrated Network of Ligand-Based Autonomous Bioagent Detectors
PI: Richard Larson
Agency: Defense Intelligence Agency (Annual Competitive Renewal)
Period: 7/1/2005 – 6/30/2009 Total Annual Award: \$6,500,000
This project focused on designing and building ligand-based biosensors.

Title: Biomagnetic In-Vivo Imaging of Ovarian Cancer (Phase 1)
PI: Richard Larson on SBIR subcontract
Agency: NIH **1R44CA123785**
Period: 5/1/2008 – 4/30/2009 Total Annual Award: \$336,044
This project focused on producing nanoparticles coupled to ligands for bindings to cells.

Title: Neutralizing Compounds for Viral Hemorrhagic Fever
PI: Richard Larson
Agency: NIAID **R56AI063448**
Period: 7/1/2005 – 8/31/2008 Total Annual Award: \$336,375

Title: Selectin Chemokine and Integrin Control, of Vascular
PI: Michael Lawrence Subcontract PI: Richard Larson (4% effort)
Agency: NIH **2R01HL54614-06 (SB)**
Period: 7/1/2003 – 6/30/2008 Total Annual Award: \$98,555
This project focused on the understanding of how VLA-4 VCAM-1 is involved in B cell lymphoma trafficking.

Title: Cell Entry Inhibitors for Sin Nombre Virus Project
PI: Hjelle Co-PI: Richard Larson (4% effort)
Agency: NIH/NIAID **1U01AI56618-01**
Period: 7/1/2003 – 6/30/2008 Total Annual Award: \$1,257,997
This project focused on cooperative research for the development of vaccines, adjuvants, therapeutics, immunotherapeutics and diagnostics for defense.

Title: Diagnosing Alzheimer 's disease with Magnetic Nanoparticles
PI: Richard Larson (SBIR subcontract)
Agency: NIH **1R43AG029015**
Period: 2/1/2007 – 1/31/2008 Total Annual Award: \$37,500

Title: Clinical and Translational Science Center at the University of New Mexico Planning Grant
PI: Burge Co-PI: Richard Larson
Agency: NIH/NCRR **1P20RR023493**
Period: 11/1/2006 – 10/31/2007 Annual Direct Cost: \$150,000
The purpose of this planning grant was to develop a funded Clinical Translational Science Center award at the University of New Mexico Health Sciences Center.

Title: Biomagnetic Sensor for Detecting Breast Cancer (Phase 1)
PI: Richard Larson (SBIR subcontract)
Agency: NIH **2R43 CA096154**
Period: 9/1/2006 – 8/31/2007 Total Annual Award: \$150,000
This project focused on the use of nanoparticles in a magnetic biopsy needle.

Title: Use of Nanoparticles in a Magnetic Biopsy Needle (phase 1)
PI: Richard Larson (SBIR subcontract)
Agency: NIH **1R43CA105742**
Period: 8/1/2005 – 7/31/2007 Total Annual Award: \$168,708
This project focused on the use of nanoparticles in a magnetic biopsy needle.

Title: Medical Student Training Award
PI: Richard Larson
Agency: ASH
Period: 6/01/2001 – 5/31/2007 Total Annual Award: \$4,500
This project focused on identifying a medical student interested in the field of hematology and encouraging research in this area.

Title: Immune Dysregulation in Allergic Asthma
PI: Mary Lipscomb Co-PI on Project 3: Richard Larson
Agency: NIH/NHLBI **2P50HL56384**
Period: 12/01/2001 – 11/06/2006
This project focused on adhesion mechanisms involved in Eosinophil localization.

Title: Animal Resources Facility Improvement
PI: Richard Larson
Agency: NIH/NCRR **1G20RR017013**
Period: 9/1/2004 – 8/31/2006 Total Award: \$700,000 (\$600,000 Institutional Match)
This project was to improve the ARF facilities.

Title: Biomagnetic Determination of Transplant Rejection (Phase 1)
PI: Richard Larson SBIR subcontract
Agency: NIH **1R43AI066765**
Period: 7/1/2005 – 6/30/2006 Total Annual Award: \$22,340
This project focused on the use of nanoparticles in detection of transplant rejection.

Title: Biologic Ligand-Based Detection Systems for Biodefense
PI: Richard Larson (5% effort)
Agency: NSF **IIS-0434120**
Period: 8/1/2004 – 2/28/2006 Total Annual Award: \$240,000
This project was directed at the development of a portable, ligand-based detector system for Bioagents.

Title: Neutralizing Compounds for Viral Hemorrhagic Fever
PI: Richard Larson
Agency: NIH/NIAID **R21AI53334**
Period: 10/1/2002 – 8/31/2005 Total Annual Award: \$450,000
This project focused on drug discovery technologies to neutralize Sin Nombre virus.

Title: Neutralizing Compounds for Viral Hemorrhagic Fever
PI: Richard Larson
Agency: NIH/NIAID **R21AI53334**
Period: 09/01/2003 – 08/31/2005 Total Annual Award: \$225,000

Title: T-ALL Stromal Cell Interaction and Patient Outcome
PI: Richard Larson
Agency: NIH/NCI **R21CA982511**
Period: 2/1/2003 – 1/31/2005 Total Annual Award: \$300,000
This project focused on innovative in vitro assays of survival and adhesion receptor defects in samples from T-ALL pediatric subjects, which was then correlated with clinical outcomes.

Title: P30 New Mexico Institute of Environmental Health
PI: Richard Larson Core 3 Biocomputing
Agency: NIEHS
Period: 2003 – 2005 Total Annual Award: \$300,000
Larson served as Director of Biocomputing Core.

Title: UNM Cancer Center Planning Grant
PI: Willman, MD
Agency: NIH **1P20CA88339**
Period: 7/1/2001 – 6/30/2004
Larson served as Director of Hematologic Program.

Title: Role of LFA-1 in Spread of Normal and Malignant Lymphocytes
PI: Richard Larson
Agency: American Cancer Society **RPG0009601LBC**
Period: 1/1/2000 – 12/31/2003 Total Annual Award: \$900,000

This project focused on developing peptide inhibitor of malignant B lymphocytes metasis and sought to define the role of LFA-1/ICAM-1 binding in normal B lymphocyte extravasations.

Title: Inhibitors to LFA-1 and Neutrophil Extravasation
PI: Richard Larson
Agency: American Heart Association Grant in Aid **0151298Z**
Period: 7/1/2001 – 6/30/2003 Total Annual Award: \$110,000

This project focused on designing and optimizing peptide and small molecules antagonists to LFA-1/ICAM-1.

Title: FPW Biosensor Development
PI: Richard Larson
Agency: Environmental Protection Agency
Period: 4/1/2002 – 10/31/2002 Total Annual Award: \$30,000

This project focused on development of a novel mass biosensor using ICAM-1/LFA-1 receptor-ligand interaction as prototype.

Title: Quartz-Based Biosensor
PI: Richard Larson (subcontract)
Agency: TPL, Inc.
Period: 4/1/2002 – 9/30/2002 Total Annual Award: \$45,000

This project focused on production of a biosensor for use in drug discovery.

Title: Cardiovascular Biology Institutional Research Training Grant
PI: Richard Larson
Agency: NIH/NLHBI
Period: 1999 – 2002

Title: Inhibitors to LFA-1 and Leukocyte Extravasation
PI: Richard Larson
Agency: American Heart Association (Beginning Grant in Aid)
Period: 1999 – 2001 Total Annual Award: \$60,000

Title: Role of LFA-1 Binding in the Survival of T-ALL Cells
PI: Winter Co-PI: Richard Larson
Agency: Bear Necessity Pediatric Leukemia Foundation
Period: 1999 – 2000 Total Award: \$10,000

Title: Mechanisms of Leukostasis in Acute Leukemia
PI: Eaton
Agency: NIH/IdeA
Period: 1996 – 1999 Total Award: \$163,359

Title: Role of LFA-1 in Leukocyte Localization to Lung
PI: Richard Larson
Agency: American Lung Association
Period: 1998 Total Award: \$20,000

Title: Role of LFA-1 in Leukostasis in Lung
PI: Richard Larson
Agency: American Cancer Society
Period: 1996 – 1997

Total Award: \$20,000

*Annual amounts are approximate and may have varied from year to year depending on funding source