PROFILE

A seasoned research and technology professional with thirty-nine years of experience analyzing, recommending, supporting, delivering, and directing technology solutions that improve/enhance operational core processes in education, business and research.

- Experience in developing, implementing and providing computational resources and expertise in data informatics, didactic teaching metrics, student management systems, and learning technologies.
- Experience in planning, designing, and implementing enterprise infrastructure and business solutions for database development, financial services, regulatory compliance (HIPAA, Sarbanes-Oxley, FISMA and FERPA), web services, HPC clusters, network & cyber security, and administrative systems.
- Experience in operational Information Technology Management roles; lead the organization by recruiting and retaining strong team members that are encouraged creatively and intellectually. Proven leadership in people management, performance, team building, development and motivation.
- Establish group goals, create project timelines, and meet/exceed project expectations and budget goals.
- Strong business acumen with the ability to discuss technical topics and innovations that facilitates interaction and understanding between all levels of the organization and senior leadership.
- Experience remediating weak cybersecurity environments by directing and growing cybersecurity policies, services and implementing Standard Operating Procedures, FISMA compliance and NIST-800 standards.
- Reputation for leadership, collaboration, trustworthiness, reliability, innovation, and a willingness to assume responsibilities and contribute outside of job description.

Core Competencies

- Policy and Technology Planning
- Strategic Business Collaborations
- Executive Outreach and Relationships
- Staff & Student Retention Focus
- Contract & Price Negotiation

- Strategic Investment in University Goals
- Process Implementation & Reengineering
- Research, Governance and Support Centric
- Academic & Innovative Solutions

PROFESSIONAL EXPERIENCE

California State University – Stanislaus – Turlock, CA Chief Information Officer – Associate Vice President

Stanislaus State University is one of 23 campuses that are part of the California State University system. It was established in 1957 and current has 10,600 students. The university offers 45 Bachelor's degrees, 17 Master's degrees, one Doctoral degree (Doctor of Education), and 6 teaching credentials.

Responsibilities and Achievements:

- Participate as a member of the senior administrator's team and provide input for the academic, administrative and management strategy.
- Developed and implemented an OIT governance model that includes participation and input from faculty, staff, students and administration.
- Oversee the OIT organization and its four departments Information Services, Client Services, Technology Services and Cybersecurity.
- Act as a liaison between the Academic Technology & Learning Committee, the Provost and the administration.
- Developed a campus-wide technology plan that aligns with the university strategic plan.
- Working with the Provost and the Academic Senate created an academic technology upgrade plan.

August 2018 – Current

- Act as a thought leader on the OIT Steering Committee.
- Developed a data stewardship program for the University's information systems.

University of Chicago – Chicago, IL

Executive Director, Academic and Administrative Applications Group Biological Sciences Division – Dean's Administrative Suite

The Academic and Administrative Applications Group (AAA), a sub-department of the Dean's Administrative Suite, is tasked with designing, developing and maintaining information technology systems that support the academic and research administrative needs of the Chicago Biomedicine Enterprise at the University of Chicago, which includes The Pritzker School of Medicine and the Dean's suite. The current portfolio consists of ~45 systems.

Responsibilities included:

- Participate as a member of the Biological Sciences Division senior administrator's team and provide input for the division's business and management strategy.
- Develop and support the Pritzker School of Medicine IT portfolio, including but not limited to Student Management Systems, Student Research Projects, Financial Aid Module, Admissions, and administrative Core.
- Act as a thought leader on the Technology & Innovation in Medical Education Committee.
- Act as a liaison between the AAA and the data stewards of the University's Information Technology Services group (ITS).
- Oversee and develop compliance within the application development process for Federal regulations HIPAA, Sarbanes-Oxley, FISMA and FERPA.
- Design, develop and implement complex IT systems, as well as create and manage the AAA operational budget.
- Interact directly with customers and faculty to determine business needs and interpret needs to technical staff and executive leadership.
- Coordinate with other internal and external IT groups to develop appropriate business, technical and organizational strategies and processes.
- Provide guidance and leadership in planning enterprise infrastructure upgrades and deployments.

University of Chicago – Chicago, IL Executive Director, Academic and Research Group

January 2009 to 2011

Center for Research Informatics

The Center for Research Informatics (CRI) is a center within the Biological Sciences Division of the University of Chicago. The mission of the CRI is to provide computational resources and expertise in biomedical informatics for the BSD. Additionally, the Academic and Research Group within the CRI provided application development resources for the BSD operational units.

Responsibilities include:

- Provide guidance and leadership in planning enterprise infrastructure deployment. Systems deployment included High Performance Compute clusters, Virtual Machine Farms, High Memory Servers and highly available data storage.
- Oversee and manage the migration of complex systems from the Prudential Datacenter to the FISMA compliant Kenwood (Hyde Park) datacenter.
- Oversee and develop FISMA and HIPAA compliance within the university datacenter using NIST standards.
- Participate as a member of the CRI senior administrator's team and provide input for business and management strategy.
- Act as a liaison between the CRI and the data stewards of the University's Information Technology Services group (ITS).
- Coordinate with other internal and external IT groups to develop appropriate business, technical and organizational strategies and processes.

January 2011 to May 2018

University of Chicago – Chicago, IL Director, Academic and Research Group Chicago Biomedicine Information Systems

The Academic and Research Group (ARG), a sub-department of the Chicago Biomedicine Information Systems (CBIS), is tasked with designing, developing and maintaining information technology systems that support the academic and research administrative needs of the Chicago Biomedicine Enterprise at the University of Chicago, which includes The Pritzker School of Medicine and the Dean's suite.

Responsibilities include:

- Design, develop and deploy various administrative and academic operational systems.
- Manage and support a portfolio of 45 administrative and academic systems.
- Serve on the HIPAA Steering Committee.

University of Chicago – Chicago, IL Director, Enterprise Systems, Security, Integration & Communication Biological Sciences Division Information Systems

Information Systems is a department within the Biological Sciences Division of the University of Chicago. As director of enterprise systems, security, integration and communication, it was my role to manage and implement security policies and standards (HIPAA and other regulatory requirements), to integrate and leverage IT resources and to facilitate IT communications across the division. I was directly responsible for the core enterprise services within the division. These services included security, infrastructure (email, storage and datacenter operations), field services and customer management.

Responsibilities include:

- Participate as a member of the Biological Sciences Division senior administrator's team and provide input for the division's business and management strategy.
- Act as a liaison between the faculty, executive leadership and the Information Systems department to assist in the development of appropriate business and organizational strategies and processes.
- Lead the effort to develop and deploy security policies compliant with Federal regulations HIPAA, Sarbanes-Oxley and FERPA, across the division.
- Directly manage and oversee the division's information security team as well as provide managerial support to other operational teams.
- Provide guidance and leadership in planning enterprise infrastructure.
- Interact directly with faculty to determine faculty business needs and interpret needs to technical staff and executive leadership.
- Manage and oversee the migration and integration of 3100 user accounts into a new infrastructure
- Design and deploy a security architecture designed to protect the divisional intellectual property.
- Orchestrate the integration of various departmental IT groups into the core IS department.

University of Chicago – Chicago, IL

Director of Information Systems, Department of Medicine

The Department of Medicine is a clinical and academic department within the Biological Sciences Division at the University of Chicago. As director of the department's IS group, my role was to direct and manage the daily operations of the department's programmers, enterprise group and desktop support personnel. Other responsibilities include developing the core structures, processes, methodologies, and frameworks required to support the expansion of the Department of Medicine services. Additionally, responsible for establishing methodologies and approaches to ensure that the Department of Medicine continues to deliver valued, high-quality services to its academic and clinical staff on a consistent basis while remaining within defined financial targets.

Responsibilities include:

July 2001 to December 2004

January 2005 to 2008

- Participate as a member of the Department of Medicine's senior administrator's team and provide input for the department's business and management strategy.
- Interacted with the Research, Clinical, and Operations teams in establishing methodologies and approaches to ensure that the Department of Medicine continues to deliver valued, high-quality services to its academic and clinical staff on a consistent basis while remaining within defined financial targets.
- Manage long-term relationships with select organizations that contribute significant value to both the department's clinical and academic operations.
- Oversee the consistent development of detailed proposals and statements of work to ensure pricing, project margins and service level agreements are appropriate.
- Provide thought leadership and vision for faculty and staff as they seek to transform their research and clinical operations by leveraging the latest technology solutions, including customer relationship management (CRM) solutions, enterprise content management solutions, electronic document management systems, electronic billing solutions, and application integration approaches.
- Demonstrate the ability to coordinate and collaborate with various individuals, including high and low level functional teams, project teams, as well as executive management.
- Recruit, develop, manage, and retain top-notch technical professionals, while maintaining high employee morale and productivity.

University of Chicago – Chicago, IL – Chicago, IL Manager of Information Systems, Department of Medicine

August 2000 to July 2001

Improved the quality in file server and back office solutions, as well as workstation and end user device technologies and support. Managed the network and systems management approaches, data center and network operations, and network security.

Responsibilities include:

- Developed and implemented policies, procedures and standards within the department that improved and insured quality delivery in all aspects of the IS support team.
- Reorganized, developed and implemented server and desktop security and management.
- Provided technology assessments and tactical recommendations for information management planning.
- Formalized project management and application development procedures.
- Provided formal coaching and mentoring to other team members through annual and project performance evaluations, including recommending promotions and terminating under-performing associates.

Section of Hematology/Oncology, University of Chicago – Chicago, IL September 1980 to August 2000 Research/Bioinformatics Scientist, Department of Medicine

As a research scientist within the Section of Hematology/Oncology, my primary role was of researcher and scientist within the Molecular Cytogenetics laboratory. Managed the design and execution of thousands of experiments and research projects within the Cytogenetic and Gene Mapping laboratories. Developed and managed the laboratory operations and processes.

Achievements:

• Developed a web-based application database used to collect cytogenetic patient data from over twenty countries. This project led to the publication of nine peer-reviewed articles.

- Publication of eighty-nine peer reviewed articles and one book chapter (see publications list below).
- Supervised and trained research technicians, students, academic staff, visitors and faculty from around the world.
- Functioned as the bioinformatics resource to the faculty and research staff.

EDUCATION/Certification

Bachelor of Arts, Biology - 1980 Biological Sciences Northwestern University Evanston, Illinois **Chicago Management Institute – 2006** Graduate School of Business University of Chicago Chicago, IL

ISACA – 2018 CISM (Exam Passed – Certification Pending)

Professional References: available upon request

Original Peer-reviewed Publications: 90 publications

1. Le Beau, M.M., Lemons, R.S., **Espinosa**, R., Larson, R.A., Arai, N., Rowley, J.D.: <u>IL-4</u> and <u>IL-5</u> map to human chromosome 5 in a region encoding growth factors and receptors and are deleted in myeloid leukemia's with a del (5q). Blood 73:647-650, 1989.

2. **Espinosa**, R., Sadler, J.E., Le Beau, M.M.: Regional localization of the human thrombomodulin gene. Genomics 5:649-650, 1989.

3. Lemons, R.S., **Espinosa**, R., Rebentisch, M., McCormick, F., Ladner, M., Le Beau, M.M.: Chromosomal localization of the gene encoding GTPase 8 activating protein (<u>RASA</u>) to human chromosome 5, bands q13-q15. Genomics 6:383-385, 1990.

4. Rowley, J.D., Diaz, M.O., **Espinosa**, R., Patel, Y.D., van Melle, E., Zieman, S., Taillon-Miller, P., Lichter, P., Evans, G.A., Kersey, J.H., Ward, D.C., Domer, P.H., Le Beau, M.M.: Mapping chromosome band 11q23 in human acute leukemia with biotinylated probes: Identification of 11q23 translocation breakpoints with yeast artificial chromosome. Proc. Natl. Acad. Sci. USA 87:9358-9362, 1990.

5. **Espinosa**, R., Lemons, R.S., Perlman, R.K., Kuo, W-L., Rosner, M.R., Le Beau, M.M.: Chromosomal localization of the gene encoding insulin degrading enzyme to human chromosome 10, bands q23-q25. Cytogenet. Cell Genet 57:184-186, 1991.

6. Maisonpierre, P.C., Le Beau, M.M., **Espinosa**, R., Ip, N.Y., de la Monte, S.M., Squinto, S., Furth, M.E., Yancopoulos, G.D.: Human and rat BDNF and NT-3: Gene structures, distributions and chromosomal localizations. Genomics 10:558-568,1991.

7. Rassool, F.V., Neilly, M.E., van Melle, E., **Espinosa**, R., McKeithan, T.W., Le Beau, M.M.: Preferential integration of marker DNA into the chromosomal fragile site at 3p14: An approach to cloning fragile sites. Proc. Natl. Acad. Sci. USA 88:6657-6661, 1991.

8. O'Bryan, J.P., Cogswell, P.C., Neubauer, A., **Espinosa**, R., Le Beau, M.M., Liu, E.T.: The isolation and characterization of *axl*: A novel transforming receptor tyrosine kinase isolated from chronic myelogenous leukemia cells. Mol. Cellul. Biol. 11:5016-5031,1991.

9. Zieman-van Der Poel, S., McCabe, N.R., Gill, H.J., **Espinosa** III, R., Patel, Y., Harden, A., Rubinelli, P., Smith, S.D., Le Beau M.M., Rowley, J.D., Diaz, M.O.: Identification of a gene, *MLL*, that spans the breakpoint in 11q23 translocations associated with human leukemias. Proc. Natl. Acad. Sci. USA 88:10735-10739, 1991.

10. Xia, Y., Brown, L., Yang, C.Y-C., Tsan, J.T., Siciliano, M.J., **Espinosa** III, R., Le Beau, M.M., Baer, R.J.:*TAL2*, a helix-loop-helix gene activated by the (7;9)(q34;q32) translocation in human T-cell leukemia.: Proc. Natl. Acad. Sci. USA 88:11416-11420, 1991.

11. Rassool, F.V., Le Beau, M.M., Neilly, M.E., van Melle, E., **Espinosa** III, R. McKeithan, T.W.: Increased genetic instability of the common fragile site at 3p14 after integration of exogenous DNA. Am J. Hum. Genet., 50:1243-1251, 1991.

12. Thangavelu, M., Neuman, W.L., **Espinosa** III, R., Nakamura, Y., Westbrook, C.A., Le Beau, M.M.: A physical and genetic linkage map of the distal long arm of chromosome 5. Cytogenet. Cell Genet. 59:27-30, 1992.

13. Ip, N.Y., Ibanez, C.F., Nye, S.H., McClain, J., Jones, P.F., Gies, D.R., Belluscio, L., Le Beau, M.M., **Espinosa** III, R., Squinto, S.P., Persson, H., Yancopoulos, G.D.: Mammalian neurotrophin-4: Structure and chromosomal localization, tissue distribution and receptor specificity. Proc. Natl. Acad. Sci., U.S.A., 89:3060-3064, 1992.

14. Seino, S., Yamada, Y. **Espinosa** III, R., Le Beau M.M., Bell, G.I., Assignment of the gene encoding the al subunit of the neuroendocrine/brain-type calcium channel (*CACNL1A2*) to human chromosome 3, band p14.3. Genomics 13:1375-1377,1992.

15. McKeithan, T.W., Warshawsky, L., **Espinosa** III, R., Le Beau, M.M.: Molecular cloning of the breakpoints of a complex Philadelphia chromosome translocation: Identification of a repeated region on chromosome 17. Proc. Natl. Acad. Sci. USA 89:4923-4927, 1992.

16. Ohagi, S., La Mendola, J., Le Beau, M.M., **Espinosa** III, R., Takeda, J., Smeekens, S.P., Chan, S.J., Steiner, D.F.: Identification and analysis of the gene encoding human PC2; a prohormone convertase expressed in neuroendocrine cells. Proc. Natl. Acad. Sci. U.S.A. 89:4977-4981, 1992.

17. White, D.M., Mikol, D.D., **Espinosa** III, R., Weimer, B., Le Beau, M.M., Stefansson, K.: Structure and chromosomal localization of the human gene for a brain form of prostaglandin D2 synthase. J. Biol. Chem. 267:23202-23208, 1992.

18. Li, Y-S., Hoffman, R. M., Le Beau, M. M., **Espinosa** III, R., Jenkins, N. A., Gilbert, D. J., Copeland, N. G., Deuel, T. F.: Characterization of the human pleiotrophin gene: promotor region and chromosomal localization. J. Biol. Chem. 267:26011-26016,1992.

19. Jenkins, R.B., Le Beau, M.M., Kraker, W.J., Borell, T.J., Stalboerger, P.G., Davis, E.M., Penland, L., Fernald, A.A., **Espinosa** III, R., Schaid, D.J., Noel, P., Dewald, G.W.: Interphase fluorescence in situ hybridization: A sensitive method for trisomy 8 detection in bone marrow specimens. Blood 79:3307-3315, 1992.

20. Le Beau, M.M., Ito, C., Cogswell, P., **Espinosa** III, R., Fernald, A.A., Baldwin Jr., A.S.: Chromosomal Localization of the genes encoding the p50/p105 subunits of NF-KB (*NFKB2*) and the IkB/MAD-3 (*NFKB1*) inhibitor of NF-kB to 4q24 and 14q13, respectively. Genomics 14:529-531, 1992.

21. Bohlander, S.K., **Espinosa** III, R., Le Beau M.M., Rowley, J.D., Diaz, M.O.: A method for the rapid sequence-independent amplification of microdissected chromosomal material. Genomics 13:1322-1324, 1992.

22. Brown, L., **Espinosa** III, R., Le Beau, M.M., Siciliano, M.J. Baer, R.J.:*HEN1* and *HEN2*: A subgroup of basic helix-loop-helix genes that are coexpressed in a human neuroblastoma. Proc. Natl. Acad. Sci. USA 89:8492-8496, 1992.

23. Neuman, W.L., Westbrook, C.A., Dixon, M., **Espinosa** III, R., Patel, Y.D., Nakamura, Y., Weiffenbach, B., Le Beau, M.M., Physical localization of 70 polymorphic markers to human chromosome 5 by fluorescence in situ hybridization. Cytogenet. Cell Genet. 62:207-210, 1993.

24. Yamada, Y., Stoffel, M., **Espinosa** III, R., Xiang, K.-S., Seino, M., Seino, S., Le Beau, M.M., Bell, G.I.: Human somaostatin receptor genes: localization to human chromosomes 14, 17, 22 and identification of simple tandem repeat polymorphisms. Genomics 15:449-452, 1993.

25. Letho, M., Stoffel, M., Groop, L., **Espinosa** III, R., Le Beau, M.M., Bell, G.I.: Assignment of the gene encoding glycogen synthase *(GYS)* to human chromosome 19, band q13.3. Genomics 15:460-461, 1993.

26. Stoffel, M., Xiang, K.-S., **Espinosa** III, R., Cox, N.J., Le Beau, M.M., Bell, G.I.: cDNA sequence and localization of polymorphic human cytosolic phosphoenolpyruvate carboxykinase gene *(PCK1)* to chromosome 20, band q13.3: *PCK1* is not tightly linked to maturity-onset diabetes of the young. Human Mol. Genet. 2:1-4, 1993.

27. Stoffel, M., **Espinosa** III, R., Keller, S.R., Lienhard, G.E., Le Beau, M.M., Bell, G.I.:Human insulin receptor substrate-1 gene (IRS1): chromosomal localization to 2q35-q36.1 and identification of a simple tandem repeat DNA polymorhism. Diabetologia 36:335-337, 1993.

28. Burnett, R.C., **Espinosa** III, R., Shows, T.B., Eddy, R.L., Le Beau, M.M., Rowley, J.D., Diaz, M.O.: Molecular analysis of a t(11;14)(q23;q11) from a patient with null-cell acute lymphoblastic leukemia. Genes Chrom. Cancer 7:38-46, 1993.

29. Nucifora, G., Birn, D.J., **Espinosa** III, R., Erickson, P., Le Beau, M.M., Roulston, D., Drabkin, H., Rowley, J.D.: Involvement of the *AML1* gene in the t(3;21) in the therapy-related leukemia and in chronic myeloid leukemia in blast crisis. Blood 81:2728-2734,1993.

30. Kobayashi, H., **Espinosa** III, R., Thirman, M.J., Davis, E.M., Diaz, M.O., Le Beau, M.M., Rowley, J.D.: Variability of 11q23 rearrangements in hematologic cell lines identified with fluorescence *in situ* hybridization. Blood 81:3027-3033, 1993.

31. Le Beau, M.M., **Espinosa** III, R., Neuman, W.L., Stock, W., Roulston, D., Larson, R.A., Keinanen, M., Westbrook, C.A.: Cytogenetic and molecular delineation of the smallest commonly deleted region of chromosome 5 in malignant myeloid diseases. Proc. Natl. Acad. Sci. USA 90:5484-5488, 1993.

32. Baron, B.W., Nucifora, G., McCabe, N.R., **Espinosa** III, R., Le Beau, M.M., McKeithan, T.W.: Cloning of the gene associated with the recurring chromosomal translocations t(3;14)(q27;q32) and t(3;22)(q27;q11) in B-cell lymphomas. Proc. Natl. Acad. Sci. USA 90:5262-5266, 1993.

33. Kobayashi, H., **Espinosa** III, R., Thirman, M.J., Fernald, A.A., Shannon, K., Diaz, M.O., Le Beau, M.M., Rowley, J.D.: Do terminal deletions of 11q23 exist? Identification of undetected translocations with fluorescence *in situ* hubridization. Genes Chrom. Cancer 7:204-208, 1993.

34. Kobayashi, H., **Espinosa** III, R., Thirman, M.J., Gill, H.J., Fernald, A.A., Diaz, M.O., Le Beau, M.M., Rowley, J.D.: Heterogeneity of breakpoints of 11q23 rearrangements in hematologic malignancies identified with fluorescence in *situ* hybridization. Blood 82:547-551, 1993.

35. Yasuda, K., **Espinosa** III, R., Davis, E. M., Le Beau, M. M., Bell, G.: Human somatostatin receptor genes: Localization of SSTR5 to human chromosome 20p11.2. Genomics 17:785-786, 1993.

36. Roulston, D., **Espinosa** III, R., Stoffel, M., Bell, G.I., Le Beau, M.M.: Molecular genetics of myeloid leukemia: identification of the commonly deleted segment of chromosome 20. Blood 82:3424-3429, 1993.

37. Chang, C., Saltzman, A., Lee, H.J., Uemura, H., Su, C., Chodak, G., Nakamoto, T., Le Beau, M. M., **Espinosa** III, R., Davis, E. M., Lemons, R.S., Sivak, L., Shih, C.: Genomic structure, chromosomal localization and expression of an androgen inducible TR3 orphan receptor: a member of the steroid receptor superfamily. Endocr. J. 1:541-549, 1993.

38. Kobayashi, H., **Espinosa** III, R., Fernald, A.A., Begy, C., Diaz, M.O., Le Beau, M.M., Rowley, J.D.: Analysis of deletions of the long arm of chromosome 11 in hematologic malignancies with fluorescence in situ hydridization. Genes Chrom. Cancer 8:246-252, 1993.

39. Letho, M., Xiang, K., **Espinosa** III, R., Groop, L.C., Le Beau, M.M., Bell, G.I.: Human hexokinase II: Localization of the polymorphic gene to chromosome 2. Diabetologia 36: 1299-1302, 1993.

40. Sturrock, A.B., **Espinosa** III, R., Hoidal J.R., Le Beau, M.M.: Localization of the gene encoding proteinase-3 (the Wegener's granulomatosis autoantigen) to human chromosome band 19p13.3. Cytogenet. Cell Genet. 64: 33-34,1993.

41. Bohlander, S.K., **Espinosa** III, R., Fernald, A.A., Rowley, J.D., Le Beau, M.M., Diaz, M.O.: Sequence-independent amplification of yeast artificial chromosomes for fluorescence in situ hydridization. Cytogenet. Cell Genet. 65:108-110, 1994.

42. Stoffel, M., **Espinosa** III, R., Powell, K. L., Philipson, L. H., Le Beau, M. M., Bell, G. I.: Human G-protein-coupled inwardly rectifying potassium channel (GIRK1) gene (KCNJ3): localization to chromosome 2 and identification of a simple tandem repeat polymorphism. Genomics 21:254-256, 1994.

43. Jones, E.M.C., Menzel, S., **Espinosa** III, R., Le Beau, M.M., Bell, G. I., Takeda, J.: Localization of the gene encoding a neutral amino acid transporter-like protein to human chromosome band 19q13.3 and characterization of a simple sequence repeat DNA polymorphism. Genomics 23:490-491, 1994.

44. Westbrook, C.A., Le Beau, M.M., Neuman, W.L., Keinanen, M., Yamaoka, L.H., Speer, M.C., **Espinosa** III, R., Nakamura, Y., Williamson, R., Mullan, M., Beutow, K.: Physical and genetic map of 5q31: use of fluorescence in situ hybridization data to identify errors in the CEPH database. Cytogenet Cell Genet 67:86-93, 1994.

45. **Espinosa** III, R., Funahashi, T., Hadjiagapiou, C., Le Beau, M.M., Davidson, N.O.: Assignment of the gene encoding the human apolipoprotein B mRNA editing enzyme (HEPR) to chromosome 12, band p13.1. Genomics 24: 414-5, 1994.

46. Stoffel, M., **Espinosa** III, R., Trabb, J.B., Le Beau, M. M., Bell, G. I.: Human type I pituitary adenylate cyclase activating polypeptide receptor (*ADCYAP1R*): Localization to chromosome band 7p14 and integration into the cytogenetic, physical and genetic map of chromosome 7. Genomics 23: 697-699, 1994.

47. German, M. S., Wang, J., Fernald, A. A., **Espinosa** III, R., Le Beau, M. M., Bell, G. I.: Localization of the genes encoding two transcription factors, LMX1 and CDX3, regulating insulin gene expression to human chromosomes and 13. Genomics 24: 403-404, 1994.

48. Yasuda, K., **Espinosa** III, R., Takeda, J., Le Beau, M.M., Bell G.I. Localization of kappaopioid receptor gene to human chromosome band 8q11.2. Genomics 19: 596-597, 1994.

49. Vaxillaire, M., Vionnet, N., Vigouroux, C.,Sun, F., **Espinosa**, R., Le Beau, M.M., Stoffel, M., Letho, M., Detheux, M., Passa, P., Cohen, D., Van Schftingen, E.V., Velho, G., Bell, G.I., Froguel, P.: Search for a third susceptibility gene for maturity-onset diabetes of the young: studies with eleven candidate genes. Diabetes 43:389-395, 1994.

50. Varanasi, U., Chu, R., Chu, S., **Espinosa** III, R., Le Beau, M.M., Reddy, J.K.: Isolation of the human oeroxisomal acyl-CoA oxidase gene: organization, promoter analysis and chromosomal localization. Proc Natl Acad Sci, USA 91:3107-3111, 1994.

51. Le Beau, M.M., Carver, L.A., **Espinosa** III, R., Schmidt, J.V., Bradfield, C.A.: Chromosomal localization of the human AHR locus encoding the structural gene for the AH receptor to $7p21 \rightarrow p15$. Cytogenet Cell Genet 66:172-176, 1994.

52. Takeda, J., **Espinosa** III, R., Eng, S., Le Beau, M. M., Bell, G. I.: Chromosomal assignment and tissue distribution of novel expressed sequence tags from a human pancreatic islet cDNA library. Genomics 29: 276-281, 1995.

53. Stoffel, M., Stein, R., Wright, C. V., **Espinosa** III, R., Le Beau, M. M., Bell, G. I.: Localization of human homeodomain transcription factor insulin promoter factor 1 (IPF1) to chromosome band 13q12.1. Genomics 28: 125-126, 1995.

54. Martinez-Climent, J. A., **Espinosa** III, R., Thirman, M. J., Le Beau, M. M., Rowley, & J. D.: Abnormalities of chromosome band 11q23 and the MLL gene in pediatric myelomonocytic and monoblastic leukemias. Identification of the t(9;11) as an indicator of long survival. J Pediatr Hematol Oncol 17: 277-283, 1995.

55. Valenzuela, D. M., Economides, A. N., Rojas, E., Lamb, T. M., Nunez, L., Jones, P., Lp, N. Y., **Espinosa**, R., Brannan, C. I., Gilbert, D. J., Copeland, N.G., Jenkins, N.A., Le Beau, M.M., Harland, R.M., Yancopoulos, G.D.: Identification of mammalian noggin and its expression in the adult nervous system. J Neuro Sci 15: 6077-6084, 1995.

56. Martinez-Climent, J. A., Thirman, M. J., **Espinosa** III, R., Le Beau, M.M., Rowley, J. D.: Detection of 11q23/MLL rearrangements in infant leukemias with fluorescence in situ hybridization and molecular analysis. Leukemia 9: 1299-1304, 1995.

57. J. Zhou, J. L. Neidigh, **Espinosa** III, R., M. M. Le Beau & D. A. McClain Human glutamine: fructose-6-phosphate amidotransferase: characterization of mRNA and chromosomal assignment to 2p13. Hum Genet 96: 99-101, 1995.

58. Olopade, O. I., Pomykala, H. M., Hagos, F., Sveen, L. W., **Espinosa** III, R., Dreyling, M. H., Gursky, S., Stadler, W. M., Le Beau, M. M., Bohlander, S. K.: Construction of a 2.8-megabase yeast artificial chromosome contig and cloning of the human methylthioadenosine phosphorylase gene from the tumor suppressor region on 9p21. Proc Natl Acad Sci U S A 92: 6489-6493, 1995.

59. Valenzuela, D. M., Rojas, E., Le Beau, M. M., **Espinosa** III, R., Brannan, C. I., McClain, J., Masiakowski, P., Ip, N. Y., Copeland, N. G., Jenkins, N. A., Yancopoulos, G.D.: Genomic organization and chromosomal localization of the human and mouse genes encoding the alpha receptor component for ciliary neurotrophic factor. Genomics 25: 157-163, 1995.

60. Tsaur, M. L., Menzel, S., Lai, F-P., **Espinosa** III, R., Concannon, P., Spielman, R. S., Hanis, C. L., Cox, N. J., Le Beau, M. M., German, M. S., Jan, L.Y., Bell, G.I., Stoffel, M.: Isolation of a cDNA clone encoding a K_{ATP} channel-like protein expressed in insulin-secreting cells, localization of the human gene to chromosome band 21q22.1, and linkage studies with NIDDM. Diabetes 44: 592-596, 1995.

61. Hidai, H., Quertermous, E.E., **Espinosa** III, R., Le Beau, M.M., Quertermous T.: Genomic organization and chromosomal localization of the gene TCF15 encoding the early mesodermal basic helix-loop-helix factor bHLH-EC2. Genomics 30:598-601, 1995.

62. Tanabe, S., Zeleznik-Le, N.J., Kobayashi, H., Vignon, C., **Espinosa** III, R., Le Beau, M.M., Thirman, M.J., Rowley, J.D.: Analysis of the t(6;11)(q27;q23) in leukemia shows a consistent breakpoint in *AF6* in three patients and in the ML-2 cell line. Genes Chromosomes Cancer 15:206-216, 1996.

63. Stoffel,M., Le Beau, M.M., **Espinosa** III, R., Bohlander, S.F., Le Paslier, D., Cohen, D., Xiang, K-S., Fajani, S.S., Bell, G.I.: A YAC-based map of the region of chromosome 20 containing the diabetessusceptibility gene, MODY1, and deleted in malignant myeloid disorders. Proc Natl Acad Sci, USA 93:3937-3941, 1996. 64. Le Beau, M.M., **Espinosa** III, R., Davis, E.M., Eisenbart, J.D., Larson, R.A., Green, E.D.: Cytogenetic and molecular delineation of a region of chromosome 7 commonly deleted in malignant myeloid diseases. Blood 88:1930-1935, 1996.

65. Tanabe, S., Bohlander, S.K., Vignon, C.V., **Espinosa** III, R., Zhao, N., Strissel, P.L., Zeleznik-Le, N.J., Rowley, J.D.: *AF10* is split by *MLL* and *HEAB*, a human homolog to a putative *Caenorhabditis elegans* ATP/GTP-binding protein in an invins(10;11)(p12;q23q12). Blood 88:3535-3545, 1996.

66. Strissel, P.L., **Espinosa** III, R., Rowley, J.D., Swift, H.: Scaffold attachment regions in centomereassociated DNA. Chromosoma 105:122-133, 1996.

67. Levi-Setti, R., Chabala, J.M., Gavrilov, K., **Espinosa** III, R., Le Beau, M.M.: Advances in high resolution SIMS studies of BrdU-labelled human metaphase chromosomes. Cell Mol Biol 42:301-324, 1996.

68. Rassool, F.V., Le Beau, M.M., Shen, M.L., Neilly, M.E., **Espinosa**, R. 3rd, Ong, S.T., Boldog, F., Drabkin, H., McCarroll, R., McKeithan, T.W.: Direct cloning of DNA sequences from the common fragile site region at chromosome band 3p14.2. Genomics 35(1):109-17,1996.

69. Levi-Setti, R., Chabala, J.M., Gavrilov, K., **Espinosa**, R. 3rd, Le Beau, M.M.: Imaging of BrdUlabeled human metaphase chromosomes with a high resolution scanning ion microprobe. Microsc Res Tech 36(4):301-12, 1997.

70. Zhao, N., Stoffel, A., Wang, P.W., Eisenbart, J.D., **Espinosa**, R. 3rd, Larson, R.A., Le Beau, M.M.: Molecular delineation of the smallest commonly deleted region of chromosome 5 in malignant myeloid diseases to 1-1.5 Mb and preparation of a PAC-based physical map. Proc Natl Acad Sci U S A 94(13):6948-53, 1997.

71. Vaisse, C., Kim, J., **Espinosa**, R. 3rd, Le Beau, M.M., Stoffel, M.: Pancreatic islet expression studies and polymorphic DNA markers in the genes encoding hepatocyte nuclear factor-3alpha, -3beta, -3gamma, -4gamma, and -6. Diabetes 46(8):1364-7,1997.

72. Sato, Y., Bohlander, S.K., Kobayashi, H., Suto, Y., Davis, E.M., **Espinosa**, R. 3rd, Le Beau, M.M., Rowley, J.D.: Identification of pericentric inversion 12, inv(12)(p13.1q11), by fluorescence in situ hybridization in a patient with acute myeloid leukemia (AML-M6). Cancer Genet Cytogenet 97(2):157-60, 1997.

73. Sato, Y., Bohlander, S.K., Kobayashi, H., Reshmi, S., Suto, Y., Davis, E.M., **Espinosa**, R., Hoopes, R., Montgomery, K.T., Kucherlapati, R.S., Le Beau, M.M., Rowley, J.D.: Heterogeneity in the breakpoints in balanced rearrangements involving band 12p13 in hematologic malignancies identified by fluorescence in situ hybridization: TEL (ETV6) is involved in only one half. Blood 90(12):4886-93, 1997.

74. Wang, P.W., Iannantuoni, K., Davis, E.M., **Espinosa**, R. 3rd, Stoffel, M., Le Beau, M.M.: Refinement of the commonly deleted segment in myeloid leukemias with a del(20q). Genes Chromosomes Cancer 21(2):75-81, 1998.

75. Camoretti-Mercado, B., Forsythe, S.M., Le Beau, M.M., **Espinosa**, R. 3rd, Vieira, J.E., Halayko, A.J., Willadsen, S., Kurtz, B, Ober, C., Evans, G.A., Thweatt, R., Shapiro, S., Niu, Q., Qin, Y., Padrid, P.A., Solway, J.: Expression and cytogenetic localization of the human SM22 gene (TAGLN). Genomics 49(3):452-7, 1998.

75. Le Beau, M.M., Rassool, F.V., Neilly, M.E., **Espinosa**, R. 3rd, Glover, T.W., Smith, D.I., McKeithan, T.W.: Replication of a common fragile site, FRA3B, occurs late in S phase and is delayed further upon induction: implications for the mechanism of fragile site induction. Hum Mol Genet 7(4):755-61, 1998.

76. Roulston, D., **Espinosa**, R. 3rd, Nucifora, G., Larson, R.A., Le Beau, M.M., Rowley, J.D.: CBFA2(AML1) translocations with novel partner chromosomes in myeloid leukemias: association with prior therapy. Blood 92(8):2879-85, 1998.

77. Zhao, N., Lai, F., Fernald, A.A., Eisenbart, J.D., **Espinosa**, R., Wang, P.W., Le Beau, M.M.: Human CDC23: cDNA cloning, mapping to 5q31, genomic structure, and evaluation as a candidate tumor suppressor gene in myeloid leukemias. Genomics 53(2):184-90, 1998.

78. Zhu, Y., Qi, C., Jain, S., Le Beau, M.M., **Espinosa**, R. 3rd, Atkins, G.B., Lazar, M.A., Yeldandi, A.V., Rao, M.S., Reddy, J.K.: Amplification and overexpression of peroxisome proliferator-activated receptor binding protein (PBP/PPARBP) gene in breast cancer. Proc Natl Acad Sci USA 96(19):10848-53, 1999.

79. Cho JH. Nicolae DL. Ramos R. Fields CT. Rabenau K. Corradino S. Brant SR. **Espinosa** R. LeBeau M. Hanauer SB. Bodzin J. Bonen DK. Linkage and linkage disequilibrium in chromosome band 1p36 in American Chaldeans with inflammatory bowel disease. [Journal Article] *Human Molecular Genetics. 9(9):1425-32, 2000 May22.*

80. Wang PW. Eisenbart JD. **Espinosa** R **3rd**. Davis EM. Larson RA. Le Beau MM. Refinement of the smallest commonly deleted segment of chromosome 20 in malignant myeloid diseases and development of a PAC-based physical and transcription map. [Journal Article] *Genomics*. 67(1):28-39, 2000 Jul 1.

81. Lai F. Godley LA. Joslin J. Fernald AA. Liu J. **Espinosa** R **3rd**. Zhao N. Pamintuan L. Till BG. Larson RA. Qian Z. Le Beau MM. Transcript map and comparative analysis of the 1.5-Mb commonly deleted segment of human 5q31 in malignant myeloid diseases with a del(5q). [Journal Article] *Genomics*. *71(2):235-45, 2001 Jan 15.*

82. Qian Z. Lin C. **Espinosa** R. LeBeau M. Rosner MR. Cloning and characterization of MST4, a novel Ste20-like kinase. [Journal Article] *Journal of Biological Chemistry*. 276(25):22439-45, 2001 Jun 22.

83. Sato Y. Kobayashi H. Suto Y. Olney HJ. Davis EM. Super HG. **Espinosa R 3rd**. Le Beau MM. Rowley JD. Chromosomal instability in chromosome band 12p13: multiple breaks leading to complex rearrangements including cytogenetically undetectable sub-clones. [Journal Article] *Leukemia*. *15(8):1193-202, 2001 Aug*.

84. Beck-Engeser GB. Monach PA. Mumberg D. Yang F. Wanderling S. Schreiber K. **Espinosa** R **3rd**. Le Beau MM. Meredith SC. Schreiber H. Point mutation in essential genes with loss or mutation of the second allele: relevance to the retention of tumor-specific antigens. [Journal Article] *Journal of Experimental Medicine*. 194(3):285-300, 2001 Aug 6.

85. Karrison T. Archer KJ. **Espinosa** R **3rd**. Wen M. Huo D. Data management and statistical methods used in the analysis of balanced chromosome abnormalities in therapy-related myelodysplastic syndromes and therapy-related acute leukemia: report from an international workshop. [Congresses. Multicenter Study] *Genes, Chromosomes & Cancer.* 33(4):346-61, 2002 Apr.

86. Abe MK. Saelzler MP. **Espinosa** R **3rd**. Kahle KT. Hershenson MB. Le Beau MM. Rosner MR. ERK8, a new member of the mitogen-activated protein kinase family. [Journal Article] *Journal of Biological Chemistry*. 277(19):16733-43, 2002 May 10.

87. Corbin S. Neilly ME. **Espinosa** R **3rd**. Davis EM. McKeithan TW. Le Beau MM. Identification of unstable sequences within the common fragile site at 3p14.2: implications for the mechanism of deletions within fragile histidine triad gene/common fragile site at 3p14.2 in tumors. [Journal Article] *Cancer Research*. *62(12):3477-84, 2002 Jun 15*.

88. Gozzetti A. Davis EM. **Espinosa** R **3rd**. Fernald AA. Anastasi J. Le Beau MM. Identification of novel cryptic translocations involving IGH in B-cell non-Hodgkin's lymphomas. [Case Reports. Journal Article] *Cancer Research*. 62(19):5523-7, 2002 Oct 1.

89. Corbin S. Neilly ME. **Espinosa** R **3rd**. Davis EM. McKeithan TW. Le Beau MM. Identification of unstable sequences within the common fragile site at 3p14.2: implications for the mechanism of deletions within fragile histidine triad gene/common fragile site at 3p14.2 in tumors. [Journal Article] *Cancer Research*. 62(12):3477-84, 2002 Jun 15.

Book Chapter:

1. Espinosa III, R., Le Beau, M.M.: Gene mapping by FISH. In: "Gene Mapping and Isolation". Methods in Molecular Biology. Humana Press, ed. Boultwood, J., pp 53-76, 1996.