

Loren Gragert, Ph.D.

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Division of Biomedical Informatics and Genomics

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Education

2014 Ph.D., Biomedical Informatics and Computational Biology, University of Minnesota, Minneapolis, MN
2001 B.S., Biochemistry, University of St. Thomas, Saint Paul, MN
B.A., Quantitative Methods / Computer Science, University of St. Thomas, Saint Paul, MN

Academic Appointments

2023- Assistant Professor, Department of Medicine, Division of Biomedical Informatics and Genomics
Tulane University School of Medicine, New Orleans, LA
2020- Associate Director, Histocompatibility and Immunogenetics Laboratory
S(ACHI) Board Certification #D251; LSBME CLS - Specialist License #339511
Department of Medicine, Section of Clinical Immunology, Allergy, and Rheumatology
Tulane University School of Medicine, New Orleans, LA
2015-2023 Assistant Professor, Department of Pathology and Laboratory Medicine, Tulane Cancer Center
Tulane University School of Medicine, New Orleans, LA

Professional Experience

2003-15 Senior Bioinformatics Scientist, National Marrow Donor Program / Be The Match, Minneapolis, MN
2001-03 Software Engineer, Lockheed Martin Tactical Systems, Eagan, MN

Research Support

Ongoing

2024-2024 CCTS UM1TR004471 Statistical and Analytical Methods Development - Role: PI
"Profiling performance of high-resolution HLA imputation with complementary metrics and visualizations using an open-source validation framework"

2024-2029 NIDDK Parent R01 DK139240 - Role: PI
"Increasing Equity and Utility in Deceased Donor Kidney Allocation with HLA Molecular Matching"
Contact PI: Michal Mankowski, New York University (NYU)

2022-2027 NIAID Parent R01 AI173095 - Role: Co-I
"HLA Immunogenetics and Kidney Allograft Outcomes"
Contact PI: Malek Kamoun, University of Pennsylvania

2020-2025 NIAID HLA/KIR Region Genomics U01 AI152960 - Role: Co-I
"MHC and KIR Sequencing and Association Analyses in the iGeneTRAIN Studies"
Contact PI: Brendan Keating, New York University (NYU)

2015- National Marrow Donor Program (NMDP) Sponsored Project - Role: PI
"HLA Bioinformatics Research"

Pending

- 2025-2030 NIAID HLA/KIR Region Genomics U01 AI152960 (Renewal) - Role: PI
“MHC and KIR Sequencing and Association Analyses in the iGeneTRaIN Studies”
Contact PI: Brendan Keating, New York University (NYU)
- 2025-2030 NIDDK Parent R01 - Role: PI
“Designing ABO-Compatible US Kidney Allocation”
Contact PI: Michal Mankowski, New York University (NYU)
- 2025-2027 NICHD Parent R21 - Role: PI
“Non-invasive fetal HLA and KIR genotyping of cell-free DNA from maternal blood”
Contact PI: Danillo Augusto, University of North Carolina - Charlotte

Completed

- 2020-2023 United Network for Organ Sharing Sponsored Project - Role: PI
“Update Calculated Panel Reactive Antibody (CPRA) Calculator”
Implemented in OPTN US Organ Allocation System on January 26, 2023

Awards

- 2024 Tulane SOM Department of Medicine, Deming Departmental Award for Excellence for Research
- 2022 American Transplant Congress, Young Investigator Award
- 2021 ASHI Conference, Most Clinically Relevant Poster Abstract Award
- 2020 Tulane Scholarly Retreat Residency, A Studio In the Woods
- 2019 Lavin Bernick Foundation Tulane Faculty Grant (Awarded to host Immune Polymorphism Workshop)
- 2010 World Marrow Donor Association (WMDA) International Donor Registries Conference (IDRC), Best Abstract
- 2009 British Society of Histocompatibility and Immunogenetics (BSHI) Meeting, Best Abstract
- 2009 European Federation of Immunogenetics (EFI) Conference, Best Abstract

Trainee Awards

- 2024-2026 T32 Predoctoral Training Award TL1TR003106, Center for Clinical and Translational Science (Alyssa Paynter)
- 2023 ASHI Conference, Most Clinically Relevant Abstract Award (D. Giovanni Biagini, PhD)

Professional Organizations

- 2004- American Society for Histocompatibility and Immunogenetics (ASHI)
- 2007- European Federation of Immunogenetics (EFI)
- 2018- American Society of Transplantation (AST)
- 2022- Society for Immune Polymorphism (SIP); Founding Board Member and Treasurer
- 2008-15 World Marrow Donor Association (WMDA)
- 2006-12 American Society of Human Genetics (ASHG)

Professional Activities

Teaching

- 2020- Tulane SOM GBCH 7240, Advanced Bioinformatics | Graphics and Deep Learning units
- 2018-2023 Tulane SOM MCPB 6070, Molecular and Cellular Pathobiology | Bioinformatics unit
- 2018-2023 Tulane SOM GBCH 7230, Intro to Bioinformatics | Python and Sequence Alignment units
- 2016-2020 Tulane SOM Pathology Resident Training Program | Pathology Informatics unit

Current Trainees

- 2023- Alyssa Paynter, PhD student in Biomedical Informatics and Genomics program (CCTS TL1 Trainee)
- 2023- Md. Shakhaowat Hossain, PhD student in Biomedical Sciences program
- 2024- Vanessa Menard, PhD student in Biomedical Sciences program
- 2024- Jenna Ko, PhD student in Biomedical Sciences program

Trainee Alumni

2020-23 Grace Williams (PhD in Biomedical Sciences | Health Informatician, Ochsner Health)
2020-23 D. Giovanni Biagini (PhD in Biomedical Sciences |)
2020-23 Marian Little, (PhD in Biomedical Sciences | Research Analyst, Emergency Care Research Inst.)
2016-19 Navchetan Kaur (Postdoctoral Fellow | Postdoctoral Fellow in Atul Butte Lab, UCSF | Natera)
2016-17 Richard Davis (MD/MPH Practicum and Culminating Experience | Clinical Informatics Fellow, Duke)

Institutional Service

2023- Associate Director of Educational Programs, Division of Biomedical Informatics and Genomics
2023- Faculty Innovation Ambassador, Tulane Innovation Institute
2023- Tulane School of Medicine Biomedical Sciences Master's Program Steering Subcommittee
2018-2020 Faculty Advisor, Computational Biology at Tulane student organization

Extramural Services

2025 ASHI HLA Informatics Workshop, Local Organizer and Faculty
2024- Genome Canada Transplant Consortium, International Scientific Advisory Committee
2024- ASHI Science and Technology Initiatives Committee (STIC)
2024- ASHI Quality Assurance and Standards (QAS) Committee
2023- AST Kidney and Pancreas Community of Practice (KPCOP), Eplet Mismatch subgroup
2023- AST Transplant Diagnostics Community of Practice (COP) Executive Committee (Co-Chair 2024-)
2023- Anthony Nolan Research Review Board
2022- International HLA and Immunogenetics Workshop (IHIW) Councilor
2021-2022 Virtual Crossmatch Advisory Committee, National Marrow Donor Program / Be The Match
2021-2023 ASHI Education Committee, Director-In-Training Career Development Working Group
2021- Instructor, Basic & Population Genetics; Bioinformatics, AFDT Histocompatibility Specialist Course
2021-2024 Louisiana Organ Procurement Agency (LOPA) HLA Subcommittee
2020- Editorial Board, *Human Immunology*
2019 Local Organizer, 2nd Immune Polymorphism and Population Dynamics Workshop, New Orleans, LA
2019- Immunobiology Working Committee, Center for International Blood and Marrow Transplant Research
2019-2023 Project Leader, HLA Dictionary, 18th International HLA and Immunogenetics Workshop
2018 Co-Organizer, 1st Immune Polymorphism and Population Dynamics Workshop, Ramat Gan, Israel
2015- Editorial Board, *HLA: Immune Response Genetics* (formerly *Tissue Antigens*)
2013-2015 Information Technology Committee, American Society for Histocompatibility and Immunogenetics

Journal Reviewing

Human Immunology (Editorial Board) | HLA: Immune Response Genetics (Editorial Board) | American Journal of Transplantation | Transplantation | Cancer Research | Bioinformatics | Cell Genomics | Journal of Clinical Investigation | Journal of the American Society of Nephrology | Clinical Journal of the American Society for Nephrology | Transplant Immunology | Communications Biology | PLoS ONE | PLoS Neglected Tropical Diseases | Cytotherapy | BMC Bioinformatics | International Journal of Immunogenetics | Frontiers in Genetics | Exploration of Immunology | Health Policy and Technology

Grant Reviewing

NIH PBKD Study Section (ECR Program) | UK MRC Fellowship | Canadian Glycomics Network | Sidra Medicine Internal Research Fund

Invited Talks

National & International

09/2024 American Society for Histocompatibility and Immunogenetics (ASHI) Conference
"Roadmap for Laboratory Data Standards" workshop session speaker
02/2024 American Society of Transplantation (AST) - Cutting Edge of Transplantation (CEoT) Conference
"Using AI for HLA Matching (Opportunities in Histocompatibility)"

02/2024 Georgetown University, Current Topics in Histocompatibility and Transplantation Teleconference
 “Modeling HLA Antigenicity to Inform Virtual Crossmatch”

06/2023 American Transplant Congress, San Diego, CA
 IMPACT talk - “Improving the Metric for Candidate HLA Sensitization (cPRA)”
 IMPACT talk - HLA Amino Acid Mismatch-Based Risk Stratification of Kidney Graft Failure
 Using a Novel Machine Learning Approach”
 In-Depth session - “Combining HLA and Non-HLA PRS for Assessing Allograft Survival”

04/2023 ASHI International Committee - ASHI Speaks Your Language - National Webinar
 “Predicting Histocompatibility with Population Genetics”

03/2023 Saudi Kidney Paired Donation (KPD) Workshop
 “Measuring Transplant Compatibility with HLA and ABO Population Genetics”

12/2022 Georgetown University, Current Topics in Histocompatibility and Transplantation Teleconference
 “Revised CPRA Metrics”

12/2022 Canadian Blood Services - HLA Webinar Series
 “Redesigning Metrics of Immunologic Compatibility for Kidney Allocation Systems”

07/2022 American Society for Histocompatibility and Immunogenetics Journal Club
 “Stem cell donor HLA typing improves CPRA in kidney allocation”

06/2022 American Transplant Congress - IMPACT Session Speaker, Boston, MA
 “New Approaches to HLA Matching and Unacceptable Antigen Determination for
 Solid Organ Transplantation - Exome Matching”

03/2022 University of Pennsylvania, Dept. of Pathology
 “Clinical Informatics and Immunogenetics in Transplant Compatibility”

12/2021 Georgetown University, Current Topics in Histocompatibility and Transplantation Teleconference
 “Broadening Metrics for Immune Compatibility to Improve Equity in Organ Allocation”

04/2021 European Federation for Immunogenetics Virtual Conference, Educational Session
 “Bioinformatics Tools for Research in Histocompatibility”

10/2020 Georgetown University, Current Topics in Histocompatibility and Transplantation Teleconference
 “Beyond Antigens: Strategies for Utilizing HLA Amino Acid Sequence Data
 in the Organ Allocation System”

10/2020 American Society for Histocompatibility and Immunogenetics (ASHI) Virtual Conference
 “Population Modeling of Histocompatibility and Equity”

03/2020 One Lambda Technical Workshop, Rancho Mirage, CA
 “Informatics Tools for Precision Histocompatibility Assessments”

09/2019 American Society for Histocompatibility and Immunogenetics (ASHI) Conference, Pittsburgh
 “Informatics Tools for Precision Histocompatibility Assessments”

09/2019 Georgetown University, Current Topics in Histocompatibility and Transplantation Teleconference
 “Virtual Crossmatch Using Molecular HLA Typing Data”

05/2019 Georgetown University, Current Topics in Histocompatibility and Transplantation Teleconference
 “Applying HLA Population Genetics to Solid Organ Transplantation:
 Rethinking the Calculated Panel Reactive Antibody Metric”

07/2018 University of Pennsylvania, Dept. of Pathology, Histocompatibility Laboratory

03/2018 Immune Polymorphism Workshop, Bar-Ilan University, Israel
 “Modeling HLA Haplotype Frequency Distributions for Transplant Matching Applications”

01/2015 American Association of Blood Bankers (AABB) Audioconference
 “HLA Match Likelihoods: Closing Disparities in Access to Transplant”

09/2014 Georgetown University, Current Topics in Histocompatibility and Transplantation Teleconference
 “Fine Mapping of HLA Associations for Hematologic Diseases using Registry Data”

09/2012 Georgetown University, Current Topics in Histocompatibility and Transplantation Teleconference
 “US Haplotype Frequencies and their Applications”

10/2011 American Association of Blood Bankers (AABB) Conference, San Diego
 “Patient Match Rates: Now and in the Future”

06/2011 Cord Blood Symposium, Plenary Session, San Francisco

Regional & Institutional

09/2023	East Jefferson General Hospital, Medical Staff Grand Rounds “Redesigning Measures of Immunologic Compatibility to Improve Equity in Organ Allocation”
03/2023	Tulane University School of Medicine, Department of Medicine Grand Rounds “Redesigning Measures of Immunologic Compatibility to Improve Equity in Organ Allocation”
03/2022	Tulane University School of Medicine, Biomedical Informatics and Genomics seminar series “Clinical Informatics and Immunogenetics in Transplant Compatibility”
04/2019	Louisiana Conference on Computational Biology & Bioinformatics, LSU, Baton Rouge, LA “Clinical Informatics Tools for Precision Histocompatibility Assessments in Solid Organ Transplantation”
12/2018	Tulane University, Primate Research Center seminar series ““MHC Disease Association Studies Using Bone Marrow Registry Genotyping Data”
10/2018	Tulane University, Computer Science Department seminar series “Assessing Transplant Compatibility using Statistical Learning”
07/2018	University of Alabama-Birmingham, Informatics Institute seminar series ““HLA Population Genetics and Informatics to Optimize the Kidney Allocation System”
01/2018	Tulane University School of Medicine, Biochemistry and Molecular Biology Department seminar series “HLA Population Genetics and Informatics to Optimize the Kidney Allocation System”
04/2017	LSU Health Sciences Center, Epidemiology Department seminar series “Genetic Epidemiology of HLA Polymorphisms in Transplantation and Cancer”
03/2017	Tulane University School of Medicine, Structural and Cellular Biology Department seminar series “The Role of Immune Gene Polymorphisms in Cancer and Transplantation”
11/2014	National Marrow Donor Program Council Meeting “HLA Match Likelihoods: Closing Disparities in Access to Transplant”

Publications

Original Investigations

1. Schmauch E, Piening B, Xia B, Zhu C, Stern J, Zhang W, Dowdell A, Loza B-L, Mohebnasab M, **Gragert L**, Khalil K, Camellato B, Faria de Oliveira M, O'Brien D, Weldon E, Lin X, Gao H, Kagermazova L, Kim J, Loupy A, Heguy A, Taylor S, Zhu F, Gao S, Gandla D, Reddy K, Chang A, Michael B, Jiang L, Jian R, Narula N, Linna-Kuosmanen S, Kaikkonen-Määttä M, Lorber M, Kellis M, Tatapudi V, Ayares D, Griesemer A, Mangiola M, Pass H, Snyder MP, Montgomery RA, Boeke JD, Keating BJ (2024) Integrative Multi-omic Profiling of Two Human Decedents Receiving Pig Heart Xenografts Reveals Strong Perturbations in Early Immune-Cell and Cellular Metabolism Responses. *Nature Medicine* 2024 May 17. doi: 10.1038/s41591-024-02972-1.
2. Crane C, Niemann M, Dale B, **Gragert L**, Shah M, Ingulli E, Morris GP. (2024) High-resolution HLA genotyping improves PIRCHE-II assessment of molecular mismatching in kidney transplantation. *Human Immunology* 2024 May 14:110813. doi: 10.1016/j.humimm.2024.110813.
3. Scorr LM, Kilic-Berkmen Gamze, Sutcliffe DJ, Dinasarapu AR, McKay JL, Bagchi P, Powell MD, Boss JM, Cereb N, Little M, **Gragert L**, Hanfelt J, McKeon A, Tyor W, Jinnah HA. (2024) Exploration of potential immune mechanisms in cervical dystonia. *Parkinsonism & Related Disorders* 2024 Feb 17:106036. doi: 10.1016/j.parkreldis.2024.106036.
4. Lim WC, Marques da Costa ME, Godefroy K, Jacquet E, Rondof E, **Gragert L**, Nhiri N, Dalfovo D, Viard M, Labaied N, Khan MA, Dessen P, Romanel A, Pasqualini C, Schleiermacher G, Carrington M, Zitvogel L, Scoazec JY, Georger B, Salmon J. (2023) Divergent HLA Variations and Heterogeneous Expression but Recurrent HLA Loss-of-Heterozygosity and Common HLA-B and TAP Transcriptional Silencing Across Advanced Pediatric Solid Cancers. *Frontiers in Immunology* Vol 14 DOI: 10.3389/fimmu.2023.1265469.
5. Ferar K, Hall TO, Crawford DC, Rowley R, Satterfield BA, Li R, **Gragert L**, Karlson EW, de Andrade M, Kullo IJ, McCarty CA, Kho A, Hayes MG, Ritchie MD, Crane PK, Mirel DB, Carlson C, Connolly JJ, Hakonarson H, Crenshaw AT, Carrell D,

- Luo Y, Dikilitas O, Denny JC, Jarvik GP, Crosslin DR. (2023) Genetic variation in the human leukocyte antigen region confers susceptibility to *Clostridioides difficile* infection. *Scientific Reports* 13:18532.
6. Israeli S, **Gragert L**, Madbouly A, Bashyal P, Schneider J, Maiers M, Louzoun Y. (2023) Combined imputation of HLA genotype and self-identified race leads to better donor-recipient matching. *Human Immunology* 84(12):110721.
 7. Li F, **Gragert L**, Biagini DG, Patel JK, Kobashigawa J, Trück J, Rodriguez O, Watson CT, Gibb D, Zhang X, Kransdorf EP. (2023) IgM Marks Persistent IgG Anti-Human Leukocyte Antigen Antibodies in Highly Sensitized Heart Transplant Patients. *Journal of Heart and Lung Transplantation* 2023 Oct 2:S1053-2498(23)02055-7. PMID: 37793509.
 8. Han J, Rushakoff J, Moayed Y, Henricksen E, Lee R, Luikart H, Shalakhi O, **Gragert L**, Benck L., Malinowski D, Kobashigawa J., Teuteberg J, Khush K, Patel J, Kransdorf EP (2023) HLA sensitization is associated with an increased risk of primary graft dysfunction after heart transplantation. *Journal of Heart and Lung Transplantation* 2023 Oct 4:S1053-2498(23)02030-2. PMID: 37802261.
 9. Johnson AC, Zhang J, **Gragert L**, Hertzberg V, Larsen, CP (2023) Belatacept with Time-limited Tacrolimus Co-immunosuppression Modifies the 3-year Risk of Eplet Mismatch in Kidney Transplantation. *American Journal of Transplantation* 2023 Sep 29;S1600-6135(23)00699-8. PMID: 37778459 DOI:10.1016/j.ajt.2023.09.011
 10. Mack SJ, Schefzyk D, Milius RP, Maiers M, Hollenbach JA, Pollack J, Heuer ML, **Gragert L**, Spellman SR, Guethlein LA, Schneider J, Bochtler W, Eberhard HP, Robinson J, Marsh SGE, Schmidt AH, Hofmann JA, Sauter J (2023) Genotype List String 1.1: Extending the Genotype List String Grammar for Describing HLA and Killer-cell Immunoglobulin-like Receptor Genotypes. *HLA: Immune Response Genetics* 102 (2): 206-212.
 11. Ansbacher-Feldman Z, Israeli S, Maiers M, **Gragert L**, De Santis D, Israeli M, Louzoun Y. (2023) GRAMM - a new method for analysis of HLA in families. *HLA: Immune Response Genetics* 102 (4):477-488.
 12. Narayan R, Niroula A, Wang T, Kuxhausen M, He M, Meyer E, Chen YB, Bhatt VR, Beitinjaneh A, Nishihori T, Sharma A, Brown VI, Kamoun M, Diaz MA, Abid MB, Askar M, Kanakry CG, **Gragert L**, Bolon YT, Marsh SGE, Gadalla SM, Paczesny S, Spellman S, Lee SJ (2023) HLA Class I genotype is associated with relapse risk after allogeneic stem cell transplantation for NPM1-mutated AML. *Transplantation and Cellular Therapy* 29 (7):452.e1-452.e11.
 13. Dasariraju S, **Gragert L**, Wager G, McCullough K, Brown NK, Kamoun M, Urbanowicz R. (2023) HLA Amino Acid Mismatch-Based Risk Stratification of Kidney Allograft Failure Using a Novel Machine Learning Algorithm. *Journal of Biomedical Informatics* 142:104374.
 14. Nilsson J, Kaabinejadian S, Yari H, Peters B, Barra C, **Gragert L**, Hildebrand W, Nielsen M. (2023) Machine learning reveals limited contribution of trans-only encoded variants to the HLA-DQ immunopeptidome by accurate and comprehensive HLA-DQ antigen presentation prediction. *Communications Biology* 6(1) 442.
 15. **Gragert L**, Spellman S, Shaw B, Maiers M. (2023) Unrelated Stem Cell Donor HLA Match Likelihoods in the US Registry Incorporating HLA-DPB1 Permissible Mismatching. *Transplantation and Cellular Therapy* 29(4) 244-252.
 16. Kim JJ, Fichtner A, Copley HC, **Gragert L**, Süsal C, Strologo LD, Oh J, Pape L, Weber LT, Weitz M, König JC, Krupka K, T Burkhard, Kosmoliaptsis V (2023) Molecular HLA mismatching for prediction of primary humoral alloimmunity and graft function deterioration in paediatric kidney transplantation. *Frontiers in Immunology* 14:1092335.
 17. Stahl M, Li Q, Lynch K, Koletzko S, Mehta P, **Gragert L**, Norris J, Aronsson C, Lindfors K, Kurppa K, Ilonen J, Krischer J, Alkolkar B, She J, Ziegler A, Toppari J, Rewers M, Agardh D, Hagopian, W, Liu E, and the TEDDY Study Group. (2023) Incidence of Pediatric Celiac Disease Varies by Region. *American Journal of Gastroenterology* 118(3):539-545.
 18. **Gragert L**, Kadatz M, Alcorn J, Stewart D, Gill J, Liwski R, Gebel H, Gill J, Lan J. (2022) ABO-Adjusted Calculated Panel Reactive Antibody (cPRA): A Unified Metric for Immunologic Compatibility in Kidney Transplantation. *American Journal of Transplantation* 22(12): 3093-3100.
 19. Olson T, Frost BF, Duke JL, Dribus M, Xie HM, Prudowsky ZD, Furutani E, Gudera J, Shah Y, Ferriola D, Xu E, He M, Zheng S, Nijim S, Lin P, Xu C, Nakano T, Oved JH, Carreno BM, Lee SJ, Monos DS, Shimamura A, Bertuch AA, **Gragert L**, Spellman SR, Babushok D (2022) Pathogenicity and impact of HLA class I alleles in aplastic anemia patients of different ethnicities. *JCI Insight* e163040.
 20. Rushakoff J, **Gragert L**, Pando MJ, Huang E, Stewart D, Lindblad K, Zhang X, Patel JK, Kobashigawa J, Kransdorf EP. (2022) HLA Homozygosity and Sensitization in Kidney Transplant Candidates. *Transplantation Direct* 8, e1312.
 21. Sajulga R, Madbouly A, Fingerson S, **Gragert L**, Bashyal P, Bolon YT, Maiers M. (2021) Predicting HLA-DPB1 Permissive Probabilities through a DPB1 Prediction Service towards the Optimization of HCT Donor Selection. *Human Immunology* 82(21) 903-911.
 22. Israeli S, **Gragert L**, Maiers M, Louzoun Y. (2021) HLA Haplotype Frequency Estimation for Heterogeneous Populations Using a Graph-Based Imputation Algorithm. *Human Immunology* 82(10) 746-757.

23. Schindler E, Dribus M, Duffy BF, Hock K, Farnsworth CW, **Gragert L**, Liu C. (2021) Human leukocyte antigen genetic polymorphism in patients with Coronavirus Disease 2019 in Midwestern United States. *HLA: Immune Response Genetics* 98(4): 370-379.
24. Mayor N, Wang T, Lee SJ, Kuxhausen M, Vierra-Green C, Barker DJ, Auletta J, Bhatt VR, Gadalla SM, **Gragert L**, Inamoto Y, Morris GP, Paczesny S, Reshef R, Ringden O, Shaw BE, Shaw P, Spellman S, Marsh SGE. (2021) Impact of Previously Unrecognized HLA Mismatches Using Ultrahigh Resolution Typing in Unrelated Donor Hematopoietic Cell Transplantation. *Journal of Clinical Oncology* 39:21 2397-2409.
25. Copley H, **Gragert L**, Leach A, Kosmoliaptsis, V. (2021) Influence of HLA class II polymorphism on predicted cellular immunity against SARS-CoV-2 at the population and individual level. *Frontiers in Immunology* 12:6-8.
26. Story, MS, Wang T, Bhatt VR, Battiwalla M, Badawy SM, Kamoun M, **Gragert L**, Brown V, Baxter-Lowe LA, Marsh SGE, Gadalla SM, Schetelig J, Mytilineos J, Miklos D, Waller E, Kuxhausen M, Spellman S, Lee S, Armistead PM (2021) Genetics of HLA peptide presentation, and impact on outcomes in HLA-matched allo-HCT. *Transplantation and Cellular Therapy* 27:7 591-599.
27. Kransdorf EP, Pando M, Stewart D, Lindblad K, Patel J, Kim I, Zhang X, Maiers M, Kobashigawa J, **Gragert L**. (2021) Stem Cell Donor HLA Typing Improves CPRA in Kidney Allocation. *American Journal of Transplantation* 21(1) 138-147.
28. Sullivan HC, **Gragert L**, Smith G, Lindblad K, Gebel H, Bray R. (2020) A simple electronic tool for comparing amino acid sequences of HLA-DPB1 alleles. *Human Immunology* 81(8): 430-436.
29. Kaur N, Pinelli D, Kransdorf E, Pando M, Smith G, Murphey C, Kamoun M, Bray R, Tambur A, **Gragert L**. (2020) A blueprint for electronic utilization of ambiguous molecular HLA typing data in organ allocation systems and virtual crossmatch. *Human Immunology* 81(2-3) 65-72.
30. Maiers M, Halagan M, **Gragert L**, Bashyal P, Schneider J, Lutsker P, Louzoun Y. (2019) GRIMM : GRaph IMputation and Matching for HLA Genotypes. *Bioinformatics* 35(18): 3520–3523.
31. Lobkovsky A, Levi L, Wolf Y, Maiers M, **Gragert L**, Alter I, Louzoun Y, Koonin E. (2019) Multiplicative fitness, rapid haplotype discovery and fitness decay explain evolution of human MHC. *Proceedings of the National Academy of Sciences* 116(28): 14098-14104.
32. Zhong C, **Gragert L**, Maiers M, Hill BT, Garcia-Gomez J, Gendzekhadze K, Senitzer D, Song J, Weisenburger D, Goldstein L, Wang S. (2019) The association between HLA and non-Hodgkin lymphoma subtypes, among a transplant-indicated population. *Leukemia & Lymphoma* 60(12): 2899-2908.
33. Allan D, Kiernan J, **Gragert L**, Dibdin M, Bartlett D, Campbell T, Mostert K, Halpenny M, Ganz K, Maiers M, Petraszko T, Elmoazzen H. (2019) Reducing ethnic disparity in access to high quality HLA-matched cord blood units for transplantation: analysis of the Canadian Blood Services' Cord Blood Bank inventory. *Transfusion* 59(7): 2382-2388.
34. Kaur N, Kransdorf EP, Pando MJ, Maiers M, Ray B, Lee JH, Lalli P, Murphey C, Bray R, **Gragert L**. (2018) Mapping molecular HLA typing data to UNOS antigen equivalents. *Human Immunology* 79: 781–789.
35. Louzoun Y, Alter I, **Gragert L**, Albrecht M, Maiers M. (2018) Modeling Coverage Gaps in Haplotype Frequencies via Bayesian Inference to Improve Stem Cell Donor Selection. *Immunogenetics* 70: 279–292.
36. Alter I, **Gragert L**, Fingerson S, Maiers M, Louzoun Y. (2017) HLA Class I Haplotype Diversity Is Consistent with Selection for Frequent Existent Haplotypes. *PLoS Computational Biology* 13(8): e1005693.
37. Bochtler W, **Gragert L**, Patel ZI, Robinson J, Steiner D, Hofmann JA, Plngel J, Baouz A, Melis A, Schneider J, Eberhard HP, Oudshoorn M, Marsh SGE, Maiers M, Muller CR (2016) A comparative reference study for the validation of HLA-matching algorithms in the search for allogeneic hematopoietic stem cell donors and cord blood units. *HLA: Immune Response Genetics* 87(6): 439-48.
38. Beksac M*, **Gragert L***, Fingerson S, Maiers M, Zhang MJ, Albrecht M, Zhong X, Cozen W, Dispenzeiri A, Lonial S, Hari P. (2016) HLA Polymorphism and Risk of Multiple Myeloma. *Leukemia* 30, 2260-2264. *Equal Contributions
39. Paunić V, **Gragert L**, Schneider J, Müller C, Maiers M. (2016) Charting Improvements in US Registry HLA Typing Ambiguity Using a Typing Resolution Score. *Human Immunology* 77(7): 542-9.
40. Dehn J, Setterholm M, Buck K, Kempenich J, Beduhn B, **Gragert L**, Madbouly A, Fingerson S, Maiers M (2016) A Predictive HLA Matching Algorithm to Enhance Rapid Identification of the Optimal Unrelated Hematopoietic Stem Cell Sources for Transplant. *Biology of Blood and Marrow Transplantation* 22(11): 2038-2046.
41. Torikai H, Mi L, **Gragert L**, Maiers M, Najjar A, Ang S, Maiti S, Dai J, Switzer K, Huis H, Dulay G, Reik A, Rebar E, Holmes M, Gregory P, Champlin R, Shpall E, Cooper L.J.N. (2016) Genetic editing of HLA expression in hematopoietic stem cells to broaden their human application. *Scientific Reports* 6, 21757.
42. Petz LD, Burnett JC, Li H, Li S, Tonai R, Bakalinskaya M, Shpall S, Armitage S, Kurtzberg J, Regan D, Clark P, Querol

- S, Gutman J, Spellman S, **Gragert L**, Rossi J. (2015) Progress toward curing HIV infection with hematopoietic cell transplantation. *Stem Cells Cloning* 8: 109–16.
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