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14 Engineering Dr
Hanover, NH

EDUCATION AND TRAINING

Year	Institution	Degree
1999-2003	Brandeis University Waltham, MA	BS, MS, Biochemistry
2004-2010	Massachusetts Institute of Technology Advisor: K. Dane Wittrup Dissertation: *Targeting the Tight Junction: Immunotherapy of Colon Cancer*	PhD, Molecular Engineering
2010-2011	Ragon Institute of MGH, MIT, and Harvard Advisor: Galit Alter	CFAR Postdoctoral Fellow

FACULTY APPOINTMENTS

Year	Title	Institution
2003-2004	Adjunct Instructor	Department of Chemistry, College of Charleston
2011-	Assistant Professor	Thayer School of Engineering Dartmouth College
2012-	Assistant Professor	Department of Microbiology and Immunology Geisel School of Medicine at Dartmouth
2016-	Adjunct Assistant Professor	Department of Chemistry Dartmouth College
2016-	Assistant Professor	Program in Quantitative Biomedical Sciences Dartmouth College

HONORS AND AWARDS

Year	Recognition
2003	United States Goldwater Scholar
2003	Nathan O. Kaplan Prize in Biochemistry, Brandeis University
2006-2009	MIT-Portugal Fellow, Massachusetts Institute of Technology
2007-2009	Antibody Society Scholar Annual Meeting Scholarship Winner
2010-2011	Harvard University Center for AIDS Research Postdoctoral Fellow
2016	Graduate Faculty Mentoring Award, Dartmouth College Graduate Studies

SPONSORED RESEARCH

PERIOD	SPONSOR	PROJECT	ROLE	LEVEL
	Completed			
2010-2011	Harvard CFAR	Phagocytic activity of antibodies in HIV-1 infection	PI	$43,424
2011-2014	BMGF (Ragon sub)	Discovery platform for inducing potent ADCC recruiting antibodies in vivo	Co-PI	$1,937,296 ($8,305,613)
2013-2015	ACR-RRF (BWH sub)	Aberrant IgG glycosylation as a mechanistic contributor to arthritis in children	PI	$42,684
2014	BMGF (Duke sub)	Introduction to GCLP Practices	PI	$1,100
2014-2015	BMGF (Duke sub)	Investigating the agreement of first principal affinity rate law models with experimental assessments of antibody effector function	PI	$2,563
2014-2015	BMGF (Duke sub)	Impact of differentially primed T cells on the glycosylation pattern of Env-specific Abs	PI	$27,000
2014-2015	NIH NIAID	Pilot Project Dartmouth Immunology COBRE	Co-I	$14,000 ($29,000)
	Current			
2012-2016	NIH NIAID	Applying high-performance protein engineering tools to HIV immunogen design	PI	$2,137,165
		Administrative Supplement (2014-2015)	PI	$228,725
2014-2018	BMGF	Mucosal Immunity in Polio: Dartmouth assays for Latin American Clinical Trials	Co-I	$212,000 ($1,175,386)
2014-2015	NIH NIAID (Ragon sub)	Tuning Fc-effector functions of HIV-specific antibodies	PI	$81,000
2014-2017	BMGF	Defining signatures of antibody responses that correlate with protection to develop down-selection criteria to guide vaccine candidate selection	Co-PI	$1,139,066 ($3,102,645)
2015-2016	BMGF	Expanding IgG Fc Assessment Services	Co-PI	$2,348,163
2015-2016	Crucell	Interactions of FlumAbs with the innate immune system through the Fc part of these anti-influenza antibodies	PI	$22,000
2015-2016	NIH NIAID (Ragon sub)	Tuning Fc-effector functions of HIV-specific antibodies	PI	$113,523

2015-2016	Munck-Pfeffercorn	Creating improved CAR T cells to treat cancer	Co-I	$50,000 ($218,214)
2015-2016	BMGF (Duke sub)	Cross Pollination Among Computational Groups	PI	$3,960
2015-2019	VA	Combination therapy using CRISP/Cas gene editing plus human monoclonal antibodies for a functional HIV cure	Co-I	$50,000 ($1,273,244)
2016-2021	BMGF (Duke sub)	Collaboration for AIDS Vaccine Discovery Immune Monitoring Core: IgG Fc Assessment Services	PI	$2,813,842
2016-2021	NIH NIAID (Duke sub)	Bridging antibody Fc-mediated antiviral functions across human and non-human primates	PI	$1,937,296
2016-2017	NIH NIAID (Ragon sub)	Demystifying the Antiviral Activity of the IgG3+ Antibody Response	PI	$172,228

Total External Funding = $24,078,775, of which $21,411,931 represents support as PI or Co-PI

SCIENTISTS SUPERVISED

Postdoctoral Scientists (9)

2011-2014: *In Vitro Evolution of HIV Envelope Variants With Enhanced Antigenicity*
Dr. Sebastian Grimm

2012-2013: *Application of Machine Learning Methods to Predict Antibody Activity*
Dr. Ickwon Choi, co-Advised with Prof. Bailey-Kellogg, Department of Computer Science

2013-2015: *Yeast Membrane Display for the Protein Evolution*
Dr. Ali Emileh

2013-2015: *Prediction of Antibody Effector Function From High Content, High Throughput Biophysical Data*
Dr. Karen Dowell, co-Advised with Prof. Bailey-Kellogg, Department of Computer Science

2014- *Establishing a GCLP-Compliant Research Core*
Dr. Josh Weiner

2014- *Computational Design of Scaffolds for the Display of Quaternary Epitopes of the HIV Envelope Protein*
Dr. Deeptak Verma, co-Advised with Prof. Bailey-Kellogg, Department of Computer Science

2015- *Computational Antibody Humanization*
Dr. Yoonjoo Choi, co-Advised with Prof. Bailey-Kellogg, Department of Computer Science

2016- *Comprehensive HIV Vaccine Profiling*
Dr. Shu Lin

2015-2016: *Investigations of Fc Receptors*
Dr. Elizabeth Periera

Thayer Graduate Students (6)

Sept 2011-2016: *Developing a Quantitative Understanding of Antibody Activity*
Austin Boesch, Ph.D., Innovation Fellow Thayer School of Engineering

Sept 2011-2016: *Methods for High-Throughput Characterization of Humoral Immunity*
Eric Brown, Ph.D., Thayer School of Engineering

Sept 2012-2013: *Characterization of Rhesus Macaque Fc Receptors*
Ying Chan, MS, Thayer School of Engineering

Sept 2013-present: *Protein Display Technologies in Mammalian Cells*
Thach Chu, graduate student, Thayer School of Engineering

April 2015-present: *Machine Learning Evaluations of Antibody Activity*
Jennifer Lai, graduate student, Thayer School of Engineering

Sept 2016-present: *Mammalian Protein Display Methods*
Benjamin Goldberg, graduate student, Thayer School of Engineering

MCB Graduate Students (6)

June 2013-2015: *The Role of Antibody and Antibody Receptor Polymorphisms in Humoral Immunity*
Nana Yaw Osei-Owusu, MS, Molecular and Cellular Biology Program

June 2013-present: *Comparative Evaluation of Antibody Humanization Methods*
Casey Hua, graduate student, Molecular and Cellular Biology Program, MD/Ph.D. Program, F31 Training Grant Recipient

June 2013-present: *Multiplex Profiling and Machine Learning Models of Antibody Glycosylation*
Hao Cheng, Molecular and Cellular Biology Program

June 2015-present: *Impact of IgG Allotypic Variation*
Andrew Crowley, Molecular and Cellular Biology Program

June 2015-present: *Role of Antibody Glycosylation in Organ Transplant*
Pranay Bharadwaj, Molecular and Cellular Biology Program

June 2016-present: *Quantitative Investigation of Antibody Effector Function*
Arijit Paul, Molecular and Cellular Biology Program

Computer Science Graduate Students (1)

May 2015-present: *Application of Machine Learning to Predict Experimental Vaccine Efficacy*
Srivamshi Pittala, co-Advised with Prof. Bailey-Kellogg, Department of Computer Science

External Graduate Students (1)

2011: *IgG Fc Glycosylation and the Elite Control of HIV-1 Infection*
Justin Eusebio, MS, Graduate Medical Sciences Program, Boston University

Rotation Graduate Students (15)

Winter 2012: *Glycosylation of Anti-Citrullinated Peptide Antibodies*
Sladjana Skopelia, Program in Experimental and Molecular Medicine

Fall 2013: *Protoplast Fusion for Mammalian Display of Protein Libraries*
Morgan Gilman, Molecular and Cellular Biology Program

Winter 2013:	*Characterization of Evolved HIV Envelope Variants* **Mike Battles**, Molecular and Cellular Biology Program
Summer 2014:	*Standardization of Antibody Analysis Methods* **Tamutenda Chidawanyika**, Molecular and Cellular Biology Program, MD/Ph.D. Program
Summer 2014:	*Passive Antibody Transfers Across the Species Barrier* **Loren Schmidt**, Molecular and Cellular Biology Program, MD/Ph.D. Program
Winter 2015:	*Selective Enrichment of Proteins Displayed in the Yeast Cell Membrane* **Greg Ho**, Department of Chemistry
Spring 2015	*Analysis of Influenza-Specific Monoclonal Antibodies* **Claire Godberson**, Program in Experimental and Molecular Medicine
Summer 2015:	*Profiling Fc Receptor Recognition of Influenza Antibodies* **Ronnie Zipkin**, Molecular and Cellular Biology Program, MD/Ph.D. Program
Fall 2015:	*Selection of Novel B7H6-Specific Antibody Fragments* **Harrison Jones**, Molecular and Celular Biology Program, MD/Ph.D. Program
Winter 2015:	*Antibody Fc Domain Display and Engineering* **Marina Kirkland**, Molecular and Celular Biology Program
Spring 2016:	*Selection of Novel B7H6-Specific Antibody Fragments* **Amy Bierman**, Molecular and Celular Biology Program
Spring 2016:	*Engineering IgG for Transport by the Polymeric IgA Receptor* **Michelle Clay**, Molecular and Celular Biology Program
Fall 2016:	*Selection of Novel NKp30 mutants for CAR T Cell Therapy* **Kaushik Saha**, Molecular and Celular Biology Program
Fall 2016:	*Evaluation of Dengue Virus Vaccine-Like Particles* **Lynn Theprungsirikil**, Molecular and Celular Biology Program
Fall 2016:	*Analysis of Influenza-Specific Monoclonal Antibodies* **Lia Harrington**, Quantitative Biological Sciences

Visiting Scholars (4)

Summer 2012:	*Role of HLA Genetics in Antibody Responses to HIV Infection* **Jennifer Lai**, MS candidate, University of Oxford, United Kingdom
Winter 2013:	*Methods to Epitope Map Antibodies Present in Polyclonal Serum* **Luc Christian Gwom**, Ph.D. candidate, University of Yaounde, Cameroon
Fall 2014:	*Impact of T Cell Priming on Antibody Activity* **Michael Storcksdieck genannt Bonsmann**, Ph.D. candidate, Ruhr-Universitat Bochum, Germany
Winter 2017: (planned)	*Novel IgG Polymorphisms and Antibody Potency* **Simone Richardson**, Ph.D. candidate, National Institute of Communicable Disease, Johannesburg, South Africa

Undergraduate Students (22)

2011-2012:	*Profiling HIV-Specific Antibodies from Infected Subjects* **Meghan Muse**, Dartmouth Department of Biological Sciences
2011:	*Construction of Viral Envelope Display Plasmids* **Neha Shetty**, undecided

2012-2013:	*High-Throughput Analysis of Poliovirus-Specific Antibodies* **Anthony Yifeng Zhao**, Engineering Sciences, Presidential Scholar
2012-2014:	*Molecular Recontion Properties of Pentraxins* **Maame Ofua Ofori**, Undergraduate Thesis, Engineering Sciences, Presidential Scholar
2012-2014:	*Enrichment of Antigenically Enhanced HIV Envelope Variants* **Weijie Lin**, Engineering Sciences, Sophomore Science Scholar
2013:	*Profiling Antibody Ligation of Fc Receptors* **Hunter Kappel**, Engineering Sciences, Richter and Cook Scholar
2013-2015:	*Profiling Antibody Responses to Vaccination* **Erica Normandin**, Engineering Sciences, Presidential Scholar
2013:	*Flow Cytometric Analysis of Evolved HIV Envelope Sequence Variants* **Bryan Rogers**, Engineering Sciences
2013:	*Properties of Rhesus Macaque Antibody Subclasses* **Emily Rogers**, Undecided, WISP Intern
2013:	*Analysis of Antibody Fc Sequence Variants* **Mariah Reese**, Engineering Sciences, WISP Intern
2013:	*Methods to Isotype Rhesus Macaque Antibodies* **Madellena Thornton**, Undecided, WISP Intern
2014-2015:	*Construction and Evaluation of HIV Envelope Variants* **Zonia Moore**, Undecided, Presidential Scholar
2014-2015	*Characterization of Human IgA and IgA Receptors* **Michaela Ledoux**, Undecided, Hellman Science Fellowship, Presidential Scholar
2014-2015:	*Antibody Fragment Display* **Michaela Helble**, Dual Degree Student, Engineering Sciences, Thayer; Biochemistry, Bowdoin College
2015-present:	*Structural Biology of IgG3* **Cheryl Chang**, Undecided, WISP Intern, Sophomore Science Scholar, Junior Science Scholar
2015-2016:	*Experimental Evaluation of HIV Variable Loop Graft Designs* **Julio Suarez**, Engineering, Undergraduate Thesis, Murphy Family DOF Research Award
2015-2016:	*Mammalian Expression of Evolved HIV Envelope Protein Variants* **Jessica Sun**, Undecided, WISP Intern, Sophomore Science Scholar
2015:	*Evaluation of Antibodies in Juvenile Arthritis* **Shuoqi Chen**, Engineering Sciences, FYRE Intern
2015-present:	*Experimental Evaluation of HIV Variable Loop Graft Designs* **Prodhi Manisha**, Engineering Sciences, Junior Research Scholar
2016:	*Engineered Antibodies to the Kell Antigen* **Haley Richards**, Undecided, WISP Intern
2016-present:	*Allotypic Antibody Variation* **Holly Langley**, Undecided, WISP Intern
2016-present:	*Dengue Immunogen Evaluation* **Ellen Kim**, Engineering

Visiting Undergraduate Students (1)

2014-present	*Computational Antibody Humanization* **Hannah Wastyk**, undergraduate student, University of Delaware, MD/Ph.D. Undergraduate Scholar Program, Goldwater Scholar

High School Students (2)

2014	*Expression and Evaluation of IgG3 Variants with Extended Plasma Circulation* **Jakub Bobrowicz**, Hanover, NH
2016	*Affinity Characterization of B7H6-specific Antibody Fragments* **Jennifer Clay**, Somewhere, PA

TEACHING

Full Courses

Term	Number	Title	Enrollment
Summer 2011	ENGS 25	Introduction to Thermodynamics	19
Summer 2012	ENGS 25	Introduction to Thermodynamics	35
Spring 2013	ENGS 25	Introduction to Thermodynamics	62
Fall 2013	ENGG 199	Advances in Biotechnology	4
Winter 2014	ENGS 58/163	Protein Engineering	21
	ENGG 199	Advances in Biotechnology	5
Spring 2014	ENGS 25	Introduction to Thermodynamics	40
Fall 2014	ENGG 260	Advances in Biotechnology	13
Winter 2015	ENGS 163	Advanced Protein Engineering	4
Spring 2015	ENGS 162	Methods in Biotechnology	3
	ENGS 260	Advances in Biotechnology	12
Fall 2015	ENGS 260	Advances in Biotechnology	20
Winter 2016	ENGS 163	Advanced Protein Engineering	8
	ENGG 260	Advances in Biotechnology	14
Spring 2016	ENGG 260	Advances in Biotechnology	21
Fall 2016	ENGS 260	Advances in Biotechnology	19
Winter 2017	ENGS 58/163	Protein Engineering	pending
	ENGG 260	Advances in Biotechnology	pending

*note: most offerings of ENGG 199/260 have been co-taught with Prof. Karl Griswold

Contributing Lecturer

Term	Number	Title
Spring 2012	ENGS 56	Introduction to Biomedical Engineering
Winter 2013	MICR 142	Advanced Cellular and Molecular Immunology
Winter 2013	ENGS 58/163	Protein Engineering
Winter 2015	MICR 142	Advanced Cellular and Molecular Immunology

Mentor/Review Board Member

Term	Number	Role/Student
Fall 2012	ENGM 178	Faculty Advisor

Fall 2013	ENGG 390	Review Board Member
Spring 2014	ENGS 88	Maame Afua O. Ofori *Generation of Pentraxins and Characterization of Their Binding with Human Fcg Receptors*
Spring 2015	ENGS 88	Erica Normandin *Glycan-Binding Protein Engineering*
Spring 2016	ENGS 88	Julio Suarez *Improving the Immune Response towards the HIV Envelope Variable Loops Through Protein Peeling*

Course Development

ENGG 199/260 Advances in Biotechnology

This reading-based course, which has grown to be offered three terms per year with an enrollment of 20 graduate students each term, was developed in collaboration with Prof. Karl Griswold, and is subscribed primarily by Ph.D. students in programs ranging from Computer Science and Quantitative Biological Sciences, to the Molecular and Cell Biology Program, and Engineering. In this course, students are pushed to identify, understand, present, and question key recent advances in biotechnology. Beyond serving to keep students apprised of advanced methods, this course is targeted to build regular reading habits, critical evaluation ability, the art of data and figure presentation, best practices in experimental design, and to improve students' technical writing and presentation skills.

PROFESSIONAL AND COMMUNITY ACTIVITIES

EXTERNAL COMMITTEES AND ADVISORY BOARDS

Years	Group	Role
2011-present	Bill and Melinda Gates Foundation Collaboration for AIDS Vaccine Discovery PI Council	Member (2011-present) Chair (2015-present
2012-present	The Center for Synthetic Immunity Scientific Advisory Board	Member
2013	National Academy of Science Workshop on Convergence	Participant

GRADUATE STUDENT THESIS COMMITTEES (external)

Student	Degree	Role	Institution, Department
Justin Eusebio	M.S.	Member	Boston University, GMS Program
Kavitha Baruah	Ph.D.	Member	University of Oxford, Biochemistry

JOURNAL REVIEW ACTIVITIES

Science	Protein Engineering Design and Selection
Cell	AIDS Research and Human Retroviruses
Science Translational Medicine	Biomacromolecules

The Journal of Clinical Investigation
PLoS Pathogens
mAbs
Journal of Virology
Journal of Immunology
Journal of Molecular Biology
Vaccine
Nature Protocols
Nature Communications
Expert Review of Anti-infective Therapy
Immunology and Cell Biology
International Immunopharmacology
Journal of Immunopharmacology
Journal of Biological Methods
PLoS One

GRANT REVIEW ACTIVITIES

Year	Role	Organization	Panel
2014-present	Ad Hoc	NIH, NIAID	Vaccine Study Section
2014	Ad Hoc	No Stomach for Cancer	Gastric Cancer Research Award
2014	Ad Hoc	A*STAR	Biomedical Research Council
2015	Ad Hoc	NIH	NH-INBRE
2016	Ad Hoc	amFAR	Innovation Grant Panel
2016	Ad Hoc	amFAR	Bringing Bioengineers into HIV Cure
2016	Ad Hoc	DHMC	Hitchcock Foundation Grants

CONSULTING ACTIVITIES

Year	Role	Organization
2011	Outside Consultant	Candela Diagnostics
2016	Outside Consultant	ImmuNext

DARTMOUTH SERVICE

Year	Role	Activity	Organization
2011-present	Faculty Advisor	First Year Advising	Division of Arts and Sciences
2011-2014	Faculty Advisor	MEM Advising	Thayer School of Engineering
2014	Panelist	Career Development Workshop – Interviewing for a Faculty Position	Postdoc Association
2015	Panelist	Women in Academia	Graduate Women in Science
2015	Panelist	Career Development Workshop – Negotiating a Faculty Position	Postdoc Association
2016	Faculty Sponsor	Intramural Club Sports	Dartmouth Cricket Club

CONFERENCE ORGANIZATION

Year	Role	Activity	Meeting
2012	Organizer	Satellite Session	AIDS Vaccine, Boston, MA, USA
2016	Chair	Oral Session	Antibodies as Drugs, Whistler, BC, CA

COMMITTEE ACTIVITIES

DARTMOUTH/THAYER SCHOOL OF ENGINEERING COMMITTEES

Years	Committee	Role
2011-2014	BE Program Committee	Member
2012-present	Thayer Distinguished Speaker Series	Member
2013-present	Conflict of Interest Management for Profs. Griswold and Bailey-Kellogg	Independent Monitor
2014-2016	Ph.D. Innovation Program Admissions Committee	Member
2014-2015	Undergraduate Curriculum Committee	Member
2015-present	MS/Ph.D. Program Committee	Member
2015-2016	MS/Ph.D. Restructuring Subcommittee	Member
2016-present	Feldberg Library Committee	Member
2016-present	Engineering in Medicine Faculty Search Committee	Member

GRADUATE STUDENT QUALIFYING EXAM COMMITTEES

Student	Degree	Role	Department
Shuen Hon	Ph.D.	Member	Engineering
Michael Balch	Ph.D.	Member	Engineering
Yonglian Fang	Ph.D.	Member	Engineering
Thach Chu	Ph.D.	Member	Engineering
Jennifer Lai	Ph.D.	Member	Engineering
Claire Godberson	Ph.D.	Member	Microbiology and Immunology
Haofeng Li	Ph.D.	Chair	Engineering

GRADUATE STUDENT THESIS COMMITTEES (internal)

Student	Degree	Role	Department
Austin Boesch	Ph.D.	Chair	Engineering
Eric Brown	Ph.D.	Chair	Engineering
Ying Chan	M.S.	Chair	Engineering
Ashwini Bhandiwad	Ph.D.	Member	Engineering
Regina Salvat	Ph.D.	Member	Engineering
Fan Zheng	Ph.D.	Member	Biological Sciences
Hao Cheng	PhD	Chair	Microbiology and Immunology
Nana Yaw Osei-Owusu	M.S.	Chair	Microbiology and Immunology
Casey Hua	MD/Ph.D.	Chair	Microbiology and Immunology
Thach Chu	Ph.D.	Chair	Engineering
Jon Guerrette	M.S.	Member	Engineering
Christina Blazanovic	M.S.	Member	Engineering
Albert Gacarez	Ph.D.	Member	Microbiology and Immunology
Jennifer Lai	Ph.D.	Chair	Engineering
Pranay Bharadwaj	Ph.D.	Chair	Microbiology and Immunology
Andrew Crowley	Ph.D.	Chair	Microbiology and Immunology
Craig McKenzie	Ph.D.	Member	Quantitative Biological Sciences
Joseph Granger	M.S.	Member	Biochemistry
Jilai Zhou	Ph.D.	Member	Biological Sciences
Claire Godberson	Ph.D.	Member	Microbiology and Immunology
Dhananjay Beri	M.S.	Member	Engineering
Jingxuan Cui	Ph.D.	Member	Biological Sciences

Shuen Hon	Ph.D.	Member	Engineering
Arijit Paul	Ph.D.	Chair	Microbiology and Immunology

INVITED PRESENTATIONS

Local

2012	Patterns in adaptive immunity: profiling antibody specificity and function Immunology and Cancer Immunotherapy Research Program, NCCC, DHMC, NH
2013	An Engineering take on HIV Vaccinology Microbiology and Immunology Annual Retreat, DHMC, Lake Morey, NH
2014	Identifying the principal components of protective immunity Molecular and Cell Biology Annual Retreat, Whitefield, NH
2014	Applying design thinking to HIV vaccinology Geisel School of Medicine MD/PhD Program Annual Retreat, Lake Morey, NH
2016	Using protein biochemistry to inform HIV vaccine development Department of Chemistry, Dartmouth College, Hanover, NH
2016	Antibody glycosylation in healthy and immunodeficient children Dartmouth Superfund Group, Hanover, NH
2016	Fine epitope signature of HIV-1 neutralization breadth at the CD4 binding site Molecular and Cell Biology Annual Retreat, Whitefield, NH
2016	Learning the protein biochemistry of potent anti-HIV antibody responses Department of Biochemistry and Molecular Biology, Drexel University Medical Center, Phildelphia, PA
2016	Building a bridge across the species barrier: immunoglobulin biology in rhesus macaques and humans Translating Innovation in Discovery through Collaboration Symposium, Cambridge, MA

National

2011	Tuning the antibody response: natural modulation of antibody glycosylation and effector function in HIV infection Antibodies as Drugs, Keystone Symposium, Keystone, CO
2011	How antibodies provide specificity to the innate immune system to fight HIV American Association of Immunologists Annual Meeting, San Francisco, CA
2011	Leveraging antibody Fc for more effective vaccines Global Health Research Congress, Seattle, WA
2011	Discovery platform for inducing potent ADCC-recruiting antibodies in vivo Collaboration for AIDS Vaccine Discovery Annual Meeting, Bill and Melinda Gates Foundation, Seattle, WA
2012	Arrays for Fc receptor binding ADCC Summit, Duke University, Durham, NC
2012	Profiling humoral immunity: determining antibody innate immune recruiting capacity AIDS Vaccine 2012, Boston, MA
2012	A walk on the dark side of antibodies Collaboration for AIDS Vaccine Discovery Annual Meeting, Bill and Melinda Gates Foundation, Seattle, WA
2013	Parsing humoral immunity: array technology to profile the natural modulation of antibody function American Institute of Chemical Engineers Society for Biological Engineering, International Conference on of Biomolecular Engineering, Ft. Lauderdale, FL
2013	Array technology to profile natural modulation of antibody function

GTC Immunotherapeutics and Immunomonitoring, San Diego, CA

2013 Non-neutralizing antibody functions that act where it counts
Collaboration for AIDS Vaccine Discovery Annual Meeting, Bill and Melinda Gates Foundation, Seattle, WA

2013 Resolving antibody activity across species
Collaboration for AIDS Vaccine Discovery Annual Meeting, Bill and Melinda Gates Foundation, Seattle, WA

2014 Understanding the role of glycosylation in antibody effector function
PepTalk – The Protein Science Week, Palm Springs, CA

2014 Learning predictive models of antibody activity
Collaboration for AIDS Vaccine Discovery, Vaccine Immune Monitoring Consortium Annual Scientific Advisory Board Meeting, Washington, DC

2014 Glycosylation signatures in predictive models of antibody activity
National Institute of Allergy and Infectious Disease, NIH, Glycoimmunology Workshop, San Diego, CA

2014 A tale of two adjuvants
National Institute of Allergy and Infectious Disease, NIH, Washington, DC

2014 IgG recognition characteristics of rhesus macaque FcgR
Workshop on Innate Immune Responses to HIV and HIV Vaccines, National Institute of Allergy and Infectious Disease, NIH, Bethesda, MD

2015 Systems Serology: Understanding the features of functionally potent antibody responses
Military HIV Research Program, Walter Reed Army Institute of Research,

2015 Potentiating protective antibody activity: a systems serology approach
Conference of Retroviruses and Opportunistic Infections (CROI), Seattle, WA

2015 Breaking the species barrier: IgG subclasses in man and macaques
Institute of Human Virology, Annual Meeting, University of Maryland, Baltimore, MD

2015 Towards a grand unified theory of antibody activity: learning the features of functionally potent antibody responses
NIH Vaccine Research Center Seminar Series, Bethesda, MD

2015 High-resolution antibody profiling to enable insights into mechanisms of humoral immunity
MassBiologics, Boston, MA

2015 Correlates of P\protection in an NHP study of the FLSC immunogen
Collaboration for AIDS Vaccine Discovery Annual Meeting, Bill and Melinda Gates Foundation, Seattle, WA

2016 Profiling protective antibody responses
HIV Vaccines, Keystone Symposia, Squaw Valley, CA

2016 Fine epitope signature of HIV-1 neutralization breadth at the CD4 binding site
Institute of Human Virology, Annual Meeting, University of Maryland, Baltimore, MD

2016 FcγR and Cross-Reactivity for Human and NHP IgG Antibodies and Effects of Glycosylation on Antibody Function
NHP Transplantation Techniques Workshop, NIH, Bethesda, MD

International

2011 Natural modulation of antibody glycosylation and effector function
EUROPRISE Antibodies Beyond Binding, Strasbourg, France

2012 Antibody effector functions
University of Oxford, Oxford

2014 Functions of protective antibodies
HIV Vaccines, Keystone Symposia, Banff, Alberta, Canada

2014 Systems serology: modeling antibody effector function
HIV Vaccines: Prospects for the Future, Les Cents Gardes, Fondation Meriuex, Les

Pensieres, Annecy, France

2014 A systems serology approach to vaccine evaluation
HIV Research for Prevention, Cape Town, South Africa

2015 Modeling Antibody Effector Function
The US-Japan Cooperative Medical Science Program 17th International Conference on Emerging Infectious Diseases, Taipei, Taiwan

2015 Polyfunctional HIV-specific antibody responses are associated with spontaneous HIV control
HIV Vaccines: Prospects for the Future, Les Cents Gardes, Fondation Meriuex, Les Pensieres, Annecy, France

2016 Evolution of antibodies for optimized effector function activities
Antibodies as Drugs, Keystone Symposia, Whistler, British Columbia, Canada

2016 IgG glycans in children with immunodeficiency
GlycoIgG, Dubrovnik, Croatia

SCHOLARSHIP

ORIGINAL RESEARCH PUBLICATIONS

Prior to Dartmouth (1-6)

1. Ackerman ME, Chalouni C, Schmidt MM, Raman VV, Ritter G, Old LJ, Mellman I, Wittrup KD. A33 antigen displays persistent surface expression. Cancer Immunol Immunother. 2008;57(7):1017-27. PMCID: 2836164.
2. Ackerman ME, Pawlowski D, Wittrup KD. Effect of antigen turnover rate and expression level on antibody penetration into tumor spheroids. Mol Cancer Ther. 2008;7(7):2233-40. PMCID: 2831054.
3. Ackerman M, Levary D, Tobon G, Hackel B, Orcutt KD, Wittrup KD. Highly avid magnetic bead capture: an efficient selection method for de novo protein engineering utilizing yeast surface display. Biotechnol Prog. 2009;25(3):774-83. PMCID: 2837102.
4. Hackel BJ, Ackerman ME, Howland SW, Wittrup KD. Stability and CDR composition biases enrich binder functionality landscapes. J Mol Biol. 2010;401(1):84-96. PMCID: 3927142.
5. Orcutt KD, Ackerman ME, Cieslewicz M, Quiroz E, Slusarczyk AL, Frangioni JV, Wittrup KD. A modular IgG-scFv bispecific antibody topology. Protein Eng Des Sel. 2010;23(4):221-8. PMCID: 2841541.
6. Ackerman ME, Moldt B, Wyatt RT, Dugast AS, McAndrew E, Tsoukas S, Jost S, Berger CT, Sciaranghella G, Liu Q, Irvine DJ, Burton DR, Alter G. A robust, high-throughput assay to determine the phagocytic activity of clinical antibody samples. J Immunol Methods. 2011;366(1-2):8-19. PMCID: 3050993.

At Dartmouth (7-40)

7. Ackerman ME, Lai JI, Pastan I, Wittrup KD. Exploiting bias in a non-immune human antibody library to predict antigenicity. Protein Eng Des Sel. 2011;24(11):845-53.
8. Dugast AS, Tonelli A, Berger CT, Ackerman ME, Sciaranghella G, Liu Q, Sips M, Toth I, Piechocka-Trocha A, Ghebremichael M, Alter G. Decreased Fc receptor expression on innate immune cells is associated with impaired antibody-mediated cellular phagocytic

activity in chronically HIV-1 infected individuals. Virology. 2011;415(2):160-7. PMCID: 3112178.
9. Lamppa JW, Ackerman ME, Lai JI, Scanlon TC, Griswold KE. Genetically engineered alginate lyase-PEG conjugates exhibit enhanced catalytic function and reduced immunoreactivity. PLoS One. 2011;6(2):e17042. PMCID: 3038863.
10. Levary DA, Parthasarathy R, Boder ET, Ackerman ME. Protein-protein fusion catalyzed by sortase A. PLoS One. 2011;6(4):e18342. PMCID: 3071835.
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BOOK

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CONFERENCE ABSTRACTS

Not reported.

PATENTS

Provisional Patent Application No.: 62/323,039. Title: High affinity B7-H6 antibodies and antibody fragments, Inventors: Margaret E. Ackerman, Casey K. Hua, Charles L. Sentman