

CURRICULUM VITAE  
**Anthony Nicholas Gerber, M.D., Ph.D.**

**1. Personal History**

Present Position:

Associate Professor of Medicine  
Pulmonary and Critical Care  
National Jewish Health (NJH)  
1400 Jackson Street K621  
Denver, CO 80206  
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[GerberA@njhealth.org](mailto:GerberA@njhealth.org)

Associate Professor of Biomedical Research  
National Jewish Health

Associate Professor of Medicine  
Pulmonary and Critical Care  
University of Colorado, Denver

Marital Status: Married, 3 children

**2. Education**

1986-90: Massachusetts Institute of Technology	B.A.	Mathematics
1990-98: University of Washington, Seattle	Ph.D.	Pathology
1990-98: University of Washington, Seattle	M.D.	

**Postdoctoral Studies/ Internships/ Residency:**

1998-99: University of California, San Francisco	Intern	Medicine
1999-00: University of California, San Francisco	Resident	Medicine
2001-05: University of California, San Francisco	Fellow	Pulmonary/Critical Care

**3. Academic Appointments**

2004-05: Instructor, Department of Medicine, University of California, San Francisco  
2006-09: Assistant Adjunct Professor, Department of Medicine, University of California, San Francisco  
2009-13: Assistant Professor of Medicine, National Jewish Health and University of Colorado, Denver

- 2013- Associate Professor of Medicine, National Jewish Health and University of Colorado, Denver  
2013 – current, Graduate faculty appointment, Pharmacology and Molecular and Cellular Biology, University of Colorado, Denver  
2014- Associate Professor of Biomedical Research, National Jewish Health

#### **4. Hospital, government or other professional positions**

2014- current: Governor-appointed commissioner for the Colorado Air Quality Control Commission

##### Consultancies

2002 -06: Consultant, Palo Alto Investors, Palo Alto, CA  
Developed intellectual underpinning for long-term investment strategy in biotech sector

2005 -11: Chief Medical Officer, Breathe Technologies, Irvine, CA

Accomplishments included:

- lead medical advisor on 3 successful 510K applications
- inventor level contributions to product design
- development, oversight and analysis of initial clinical trials that established usability and efficacy for novel, wearable, non-invasive ventilation technology (BreatheNIOV) to treat COPD.

2012-13: Consultant, Silk Road Medical, Sunnyvale, CA. Assisted in developing 510K resubmission strategy

2014-current: Consultant and Acting Chief Medical Officer, Revon Systems, Louisville, KY, Leadership role in development of COPD and asthma “Smart app” triage tools based on machine-learning methodology

#### **5. Honors, special recognition and awards**

- 1990 William Stewart Award for contributions to the MIT community  
1991 Merck fellowship  
1994 Fred Hutchinson Cancer Research Center Award for outstanding research by a medical student  
1997 ARCS Foundation Fellowship  
2005 Parker B. Francis Fellowship  
2007 Star of Hope, American Lung Association of California  
2012 Giles F. Filley Award for Excellence in Respiratory Physiology and Medicine

#### **6. Membership in professional organizations**

##### Professional Organizations

2001 – now: Member, 2013 – now  
2011 – now: Member, American Physiological Society  
2014 – now: Member, American Society for Biochemistry and Molecular Biology

## **7. Major Committee and Service Responsibilities**

### National Jewish Health

2011-now: Co-Chair, Distinguished Scientist Speaker Committee, NJH  
2013 – now: Director, Grant writing workshop, NJH. Note: over \$2,500,000 in direct costs yearly at NJH emanate from grants that have been presented at the workshop.

### Community Service

2002 – 2005: California Thoracic Society  
Member, Health Care Policy (HCP) Committee  
2005 – 2008: California Thoracic Society, Chair, HCP Committee  
2002 – 09: Advocate, American Lung Association of California  
2013 – 14: American Lung Association of Colorado, Advocacy committee  
2014 – now: Programming committee AII assembly of ATS  
2015 – 2016: Nominating committee, Genetics and Genomics Section, ATS

## **8. Licensure and board certification**

### Licenses, Certifications

1999 – now: Medical licensure, California  
2002 – now: Board Certification, Internal Medicine  
2002 – now: Advanced Cardiac Life Support  
2003 – now: Board Certification, Pulmonary Disease  
2010 – now: Medical Licensure, Colorado

## **9. Inventions, intellectual property and patents held or pending**

### Issued Patents

Freitag Lutz, Wondka Anthony, Kapust Gregory, Bryan Robert, Khenansho Michael,  
**Gerber Anthony**: Methods and devices for minimally invasive respiratory support.  
Breathe Technologies USPTO # 8,381,729

Diamond MI, and **Gerber Anthony**, Discovery of selective glucocorticoid receptor modulators  
by multiplexed reporter screening. USPTO # 8,940,705

Kapust, Gregory, Allum Todd, Wondka Anthony, Cipollone Joseph, Aguirre Joey, Eghbal  
Darius, **Gerber Anthony** and Freitag Lutz. Methods, systems and devices for non-invasive open  
ventilation with gas delivery nozzles within an outer tube. USPTO # 9,180,270

Kapust, Gregory, Allum Todd, Wondka Anthony, Cipollone Joseph, **Gerber Anthony**, Eghbal Darius, Aguirre Joey, and Kassanis George. Methods, systems, and devices for non-invasive open ventilation for treating airway obstructions. USPTO # 9,227,034

#### **10. Recent review and referee work**

AJRCCM (2 manuscripts); AJRCMB (5 manuscripts); AJP-Lung – 4 manuscripts; Elife; Chest (1 manuscript), Br. J of Pharmacology (1 manuscript), Allergy (3 manuscripts) and Annals of Neurology (1 manuscript), JACI (7 manuscripts), PLoS Genetics (1 manuscript), Molecular and Cellular Proteomics (2014); MCB – 2 manuscripts

Grant reviews -2013, 2014, 2016 Asthma UK ad hoc reviewer, 2013 MRC ad hoc reviewer

#### **11. Invited extramural lectures, presentations and visiting professorships**

May 2017 – Chair and presenter for, ‘Omics and Lung Disease symposium

March 2017 – Woolcock Respiratory Institute, Sydney, Australia

August 2016 -FASEB Biology and Pathobiology of Kruppel-like factors

March 2016- CSHL Systems Biology: Global Regulation of Gene Expression, Cold Spring Harbor, NY.

August 2015- The difficult to treat asthma patient. National Medical Association Convention, Detroit, MI

May 2015 - ChIP-seq – application to lung disease (ATS International conference)

September 2014 - University of Calgary

August 2014 - FASEB Biology and Pathobiology of Kruppel-like factors

June 2014- Washington University, St. Louis

August 2012- FASEB Biology and Pathobiology of Kruppel-like factors

April 2012- Session Co-chair Kruppel-like factors and muscle

February 2011- Pulmonary and Allergy Update, Keystone, CO

#### **12. Teaching record**

##### **Medical Students**

2003-05 UCSF 102 Major Organ Systems, Small group discussion leader for four 90 minute sessions each year

2007-08 UCSF 102 Major Organ Systems, Small group discussion leader for four 90 minute sessions each year (nominated for teaching award in 2007)

2003-09 UCSF 111, Coda Group leader for ACLS course for medical students

2013-14 UC Denver, VPR Pulmonary Sub Block, small group leader

##### **Medical Residents**

2012 – UC Denver - Classic Paper Journal Club faculty facilitator

##### **Ward attending/teaching**

2004-09 UCSF attending pulmonary consultation service, Moffitt-Long Hospital, supervision and instruction of medical students, residents and fellows

2012- now: Pulmonary fellows, UC Denver/NJH – attending in PPU at NJH.

### **Mentoring**

#### Post-doctoral fellows

Sarah Sasse (2009-2014). Current position- Research Staff Faculty Member, NJH. Sarah is fully funded as a co-PI on two grants, also writes a large sections of grants and papers entirely independently

Vineela Kadiyala (2014-current) – Received individual NRSA award (2017-19) under my supervision

Lenore Sparks (2016- current)

Omar Altonsy (2012-14). Current position – Associate Professor, Sohag University and Research Associate, University of Calgary.

Christina Mailloux (2010-12) – current - Director of Clinical Affairs, Iverson Genetics

#### Graduate Students

Britney Helling (2015-2016) – current, post-doc with Dr. Carole Ober

#### Research Associates

Kiriko Masuno (2007-09) - current, Resident, UCLA, Anesthesia

## **14. Grant Support**

### **Active Research Support**

7/10/17 – 6/30/21 (\$1,434,961 direct costs years 1-4)

2R01HL109557-06A1, National Heart, Lung and Blood Institute (NHLBI)

GERBER, ANTHONY N (PI)

Mechanisms and Consequences of Gene Induction by Glucocorticoids in Airway Smooth Muscle

07/17- 06/21 (\$344,098 total direct costs budgeted for Gerber lab over 4 year project)

DOD Peer Reviewed Medical Focused Program Award

Schwartz, DA (Overall PI)

Idiopathic Pulmonary Fibrosis, a disease initiated by mucociliary dysfunction

Role: Co-Lead investigator, Project 2. (15% effort)

## **15. Bibliography**

### Peer Reviewed Publications

**1. Gerber A.N.** and Tapscott S.J. 1996. Tumor cell complementation groups based on myogenic potential: evidence for inactivation of loci required for basic helix-loop-helix protein activity.

**Molecular and Cellular Biology**, Jul 16; 7: 3901-8. PMID: 8668208

**2. Gerber A.N., Klesert, T.R., Bergstrom, D.A., Tapscott, S.J.** 1997. Two domains of MyoD mediate transcriptional activation of genes within repressive chromatin: a mechanism for lineage determination in myogenesis. **Genes and Development**, Feb 15; 11: 436-50. PMID:

9042858

3. Otten. A.D., Firpo, E.J., **Gerber, A.N.**, Brody, L.L, Roberts, J.M., Tapscott, S.J. 1997. Inactivation of MyoD mediated expression of p21 in tumor lines. **Cell Growth and Differentiation**, Nov 8; 11: 1151-60. PMID: 9372238
4. Gredinger, E., **Gerber, A.N.**, Tamir, Y., Tapscott, S.J., Bengal, E. 1998. Mitogen-activated protein kinase pathway is involved in the differentiation of muscle cells. **Journal of Biological Chemistry**, Apr 24; 273: 10436-10444. PMID: 9553102
5. Cook, D.L., **Gerber, A.N.**, Tapscott, S.J. 1998. Modeling stochastic gene expression: Implications for haploinsufficiency. **Proceedings of the National Academy of Sciences**, Dec 22; 26: 15641-6 PMID: 9861023
6. Yun A.J., Lee P.Y., and **Gerber A.N.** 2006. Perspective. Integrating systems biology and medical imaging: understanding disease distribution in the lung model. **Am. J. Roentgenol.** April; 186(4):925-30. PMID: 16554557
7. **Gerber, A.N.**, Wilson C., Li, Y.J, Chuang, P.T. 2007. The Hedgehog regulated oncogenes Gli1 and Gli2 block myoblast differentiation by inhibiting MyoD-mediated transcriptional activation. **Oncogene.** 2007 Feb 22;26(8):1122-36 PMID: 16964293
8. **Gerber, A.N.**, Masuno K., Diamond M.I. 2009 . Discovery of selective glucocorticoid receptor modulators by multiplexed reporter screening. **Proc Natl Acad Sci U S A.** 2009 Mar 24;106(12):4929-34. PMID: 19255438
9. Masuno K, Haldar SM, Jeyaraj D, Mailloux C, Huang X, Panettieri Jr RA, Jain MK, **Gerber A.N.** 2011 Expression profiling identifies Klf15 as a glucocorticoid target that regulates Airway Hyperresponsiveness. **Am J Respir Cell Mol Biol.** 2011. Sep;45(3):642-9. PMID: 21257922
10. Haldar SM, Jeyaraj D, Anand P, Zhu H, Lu Y, Prosdocimo DA, Eapen B, Kawanami D, Okutsu M, Brotto L, Fujioka H, Kerner J, Rosca MG, McGuinness OP, Snow RJ, Russell AP, **Gerber A.N.**, Bai X, Yan Z, Nosek TM, Brotto M, Hoppel CL, Jain MK. Kruppel-like factor 15 regulates skeletal muscle lipid flux and exercise adaptation. **Proc Natl Acad Sci U S A.** 2012 Apr 9;109(17):6739-44 PMID: 22493257
11. Sasse SK, Mailloux C, Barczak A, Wang Q, Altonsy O, Jain MK, Haldar SM and **Gerber A.N.** The glucocorticoid receptor and KLF15 regulate gene expression dynamics and integrate signals through feed forward circuitry. **Mol Cell Biol.** 2013 Jun;33(11):2104-15. PMID: 23508109
12. Altonsy O, Sasse SK, Tzu P, and **Gerber A.N.** Context-dependent Cooperation Between NF- $\kappa$ B and the Glucocorticoid Receptor at a TNFAIP3 Enhancer: A Mechanism to Maintain Negative Feedback Control of Inflammation. **J Biol Chem.** 2014 Mar 21;289(12):8231-9 PMID: 24500711

13. Sasse, SK and **Gerber A.N.** Feed-forward transcriptional programming by nuclear receptors: Regulatory principles and therapeutic implications. **Pharmacology and Therapeutics**. 2014 Aug 25 PMID: 25168919
14. Sasse SK, Zuo Z, Kadiyala V, Zhang L, Pufall MA, Jain MK, Phang TL, Stormo GD, **Gerber A.N.** Response Element Composition Governs Correlations Between Binding Site Affinity and Transcription in Glucocorticoid Receptor Feed-forward Loops. **J Biol Chem**. 2015 Aug 7;290(32):19756-69. PMID: 26088140
15. Morrison-Nozik A, Anand P, Zhu H, Duan Q, Sabeh M, Prosdocimo DA, Lemieux ME, Nordsborg N, Russell AP, MacRae CA, **Gerber AN**, Jain MK, Haldar SM. Glucocorticoids enhance muscle endurance and ameliorate Duchenne muscular dystrophy through a defined metabolic program. **Proc Natl Acad Sci U S A**. 2015 Dec 8;112(49):E6780-9. PMID: 26598680
16. Kadiyala V, Sasse SK, Altonsy, MO, Berman R., Chu HW, Phang TL, and **Gerber AN**. Cistrome-based Cooperation Between Airway Epithelial Glucocorticoid Receptor and NF- $\kappa$ B Orchestrates Anti-inflammatory Effects. **J Biol Chem**. 2016 June 10. PMID: 27076634
17. Sasse SK, Altonsy MO, Kadiyala V, Cao G, Panettieri RP, and **Gerber AN**. Glucocorticoid and TNF signaling converge at A20 (TNFAIP3) to repress airway smooth muscle cytokine expression. **Am J Physiol Lung Cell Mol Physiol**., 2016 Jul 1. PMID: 27371733
18. **Gerber AN**. Measuring safety of inhaled corticosteroids in asthma. **Ann Allergy Asthma Immunol**. 2016 Dec;117(6):577-581. doi: 10.1016/j.anai.2016.05.028.PMID: 27979012
19. Altonsy MO, Mostafa MM, **Gerber AN**, Newton R. Long-acting  $\beta$ 2-agonists promote glucocorticoid-mediated repression of NF- $\kappa$ B by enhancing expression of the feedback regulator, TNFAIP3. **Am J Physiol Lung Cell Mol Physiol**. 2016 Dec 29. PMID: 28039105
20. Katial RK, Bensch GW, Busse WW, Chipps BE, Denson JL, **Gerber AN**, Jacobs JS, Kraft M, Martin RJ, Nair P, Wechsler ME. Changing Paradigms in the Treatment of Severe Asthma: The Role of Biologic Therapies. **J Allergy Clin Immunol Pract**. 2017 Mar - Apr;5(2S):S1-S14. PMID: 28143691
21. Newton R, Shah S, Altonsy MO, and **Gerber AN**. Glucocorticoid and cytokine crosstalk: Feedback, feedforward and co-regulatory interactions determine repression or resistance. **J Biol Chem**. 2017 Apr 28;292(17):7163-7172. PMID: 28283576
22. Helling BA, Gerber AN, Kadiyala V Sasse SK, Pederson B, Sparks, LA, Nakano Y, Okamoto, T, Evans CM, Yang IT, Schwartz DA. Regulation of *MUC5B* Expression in Idiopathic Pulmonary Fibrosis. **Am J Respir Cell Mol Biol**, 2017 Mar 8. Epub ahead of print. PMID: 28272906
23. Sasse, SK, Kadiyala, V, Danhorn, T, Panetti, R, Phang TL and **Gerber AN**. Glucocorticoid receptor CHIP-seq identifies PLCD1 as a KLF15 target that represses airway

smooth muscle hypertrophy. **Am J Respir Cell Mol Biol** 2017 April 4, Epub ahead of print. PMID 28375666

### **Non-peer reviewed publications and other creative activities**

#### Book chapters

1. **Gerber A.N.**, Cook D.L., and Tapscott S.J. 2005. Phenotype and stochastic gene expression: Can the noise cause haploinsufficiency? From “The Biology of Genetic Dominance”; Landes Biosciences.
2. **Gerber A.N.** 2015. Glucocorticoids and the Lung. From “Advances in Experimental Medicine and Biology 872:279-98. doi: 10.1007/978-1-4939-2895-8\_12 PMID: 26215999 [PubMed – in Process]

#### Editorials and commentaries

1. **Gerber A.N.**, Sutherland ER. Vitamin d and asthma: another dimension (Review). **Am J Respir Crit Care Med.** 2011 Dec 15;184 (12):1324-5. PMID: 2217410
2. **Gerber AN.** Genetics of glucocorticoids in asthma. **N Engl J Med.** 2011 Dec 22;365(25):2435
3. **Gerber AN.** Glucocorticoids and airway smooth muscle: some answers, more questions. **Am J Respir Crit Care Med.** 2013 May 15;187(10):1040-1.