

Curriculum Vitae

Alex J. Goodell

A. Identifying Data

Name Alexander James Goodell
Website <https://alexgoodell.com>

B. Academic History

Colleges and Universities Attended:

9/2006 – 9/2011	B.S.	Biology	Clark Honors College, University of Oregon
6/2013 – 5/2016	M.S.	Health and Medical Sciences	University of California, Berkeley
6/2013 – 5/2018	M.D.	Medicine	University of California, San Francisco

Post-graduate Training:

6/2018 – 6/2023	Combined Residency in Anesthesiology and Internal Medicine, Stanford University School of Medicine		
9/2023 – 9/2023	Certificate in Design Thinking, Hasso Plattner Institute of Design, Stanford University Graduate School of Business		
7/2023 – 6/2024	Fellowship in Anesthesia Informatics, Anesthesia Informatics and Media Lab, Stanford University School of Medicine		

Board Certification:

10/2023	American Board of Internal Medicine
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Licensure:

17/2019	Physician and Surgeon, California
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C. Employment

Academic Appointments:

7/2024 – Present	Post-Doctoral Fellow, Department of Anesthesiology, Perioperative and Pain Medicine, School of Medicine, Stanford University
7/2024 – Present	Clinical Scholar, Department of Anesthesiology, Perioperative and Pain Medicine, School of Medicine, Stanford University
7/2023 – 6/2024	Clinical Instructor, Department of Anesthesiology, Perioperative and Pain Medicine, School of Medicine, Stanford University

Other Appointments:

8/2007	Research Assistant, Luis Ángel García HIV/AIDS Clinic, Hospital de San Juan De Dios, Guatemala City, Guatemala
6/2009 – 6/2010	Director, Information Technology, Village Health Works, New York, NY
6/2011	Research Assistant, Research Division, Blood Systems Research Institute, San Francisco, CA
9/2011	Research Analyst, Global Health Sciences, UCSF & Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania
6/2012 – 6/2015	Research Analyst, Philip R. Lee Institute for Health Policy Studies, UCSF, San Francisco, CA
7/2015	Global Health Reporting Fellow, School of Journalism, UC Berkeley, Berkeley, CA

D. Teaching and Clinical Care**Clinical Teaching Responsibilities:**

9/2023 – Present	Co-Director, Artificial Intelligence and Data Science Curriculum, Residency Program, Department of Anesthesiology, Perioperative and Pain Medicine, Stanford School of Medicine
9/2023 – Present	Director, Geriatrics Curriculum, Residency Program, Department of Anesthesiology, Perioperative and Pain Medicine, Stanford School of Medicine

Major Administrative Responsibilities or Committee Assignments:

7/2023 – Present	Member, Stanford Anesthesia Informatics Group (SAIG), Department of Anesthesiology, Perioperative and Pain Medicine, Stanford School of Medicine
1/2024 – Present	Member, Quality Council, Department of Anesthesiology, Perioperative and Pain Medicine, Stanford School of Medicine
3/2024 – Present	Member, Artificial Intelligence Working Group, Department of Anesthesiology, Perioperative and Pain Medicine, Stanford School of Medicine
3/2024 – Present	Member, Artificial Intelligence Needs Assessment and Application Committee, Department of Anesthesiology, Perioperative and Pain Medicine, Stanford School of Medicine

Students / Trainees / Mentorship:

6/2014 – 6/2016	Miin Choi, School of Public Health, UC Berkeley, 1 hour / week. Advised thesis project and extensive mapping project of community health workers and disease in western Burundi.
6/2014 – 6/2016	Cassandra Macalino, MD, School of Public Health, UC Berkeley, 1 hour / week. Advised thesis project, <i>The Relationship Between Tuberculosis and Type 2 Diabetes: Confluence of Immunology and Society in South Africa</i> . Currently resident physician in Emergency Medicine.

E. Public and Professional Service**Community Service Related to Professional Work:**

6/2009 – 7/2009	Web Developer, Partners in Health, Boston, MA
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7/2010– 7/2011	Steering Committee Member, FACE AIDS, Stanford, CA
7/2011– 9/2011	Web Developer, Jubilee USA
8/2011– 9/2011	Web Developer, The Institute for Justice and Democracy in Haiti
3/2012– 6/2012	Web Developer, UK Sierra Leone Health Partners
5/2013– 7/2013	Web Developer, Health Strategies International
1/2015– 7/2015	Web Developer, The Consortium of Universities for Global Health
9/2023 – Present	Consultant, Artificial Intelligence, WikiAnesthesia Foundation

Professional Societies:

2014	Member, American College of Physicians
2015	Member, Society of Hospital Medicine
2017	Member, American Society of Anesthesiologists
2023	Member, Society for Education in Anesthesia
2023	Member, Society for Technology in Anesthesia
2024	Member, Association for Surgical Education
2024	Member, Collaboration of Surgery Education Fellows
2024	Member, MLCommons

Ad Hoc Reviewer:

6/2019	CHEST: Journal of the American College of Chest Physicians
9/2020	European Journal of Health Economics
3/2024	Vox Sanguinis
11/2024	NPJ Digital Medicine

F. Post-Degree Honors and Awards

4/2006	Presidential (<i>full-tuition</i>) Scholarship, University of Oregon, 2006
3/2006	Bower Aly Forensics Scholarship, University of Oregon
3/2007	Alumni Scholarship, Alumni Association of Portland, University of Oregon
2/2008	Merit Scholarship, College of Arts and Sciences, University of Oregon
2/2008	Edward C. Sargent III Memorial Scholarship, Robert D. Clark Honors College
4/2009	Certificate of Promising Practice, National Association of City Health Officials
4/2009	Centurion Service Award, University of Oregon
8/2009	Summer Undergraduate Research Fellowship, Albert Einstein College of Medicine
2/2010	Travel Research Grant Robert D. Clark Honors College,

4/2010	Bowerman Memorial Scholarship, University of Oregon
8/2013	University Fellowship, UC Berkeley Graduate Division
4/2014	Global Health Reporting Fellowship, UC Berkeley Center for Global Public Health
6/2015	Thesis Grant, UC Berkeley – UCSF Joint Medical Program
7/2016	Abstract Scholarship, American Thoracic Society
5/2021	Resident Wall of Fame, Stanford University Department of Anesthesiology, Perioperative and Pain Medicine
2/2024	NIH T32 Award, Stanford University Department of Anesthesiology, Perioperative and Pain Medicine

G. Bibliography

Peer-reviewed articles

1. Masalu, J. R., Aboud, M., Moshi, M. J., Mugusi, F., Kamuhabwa, A., Mgidwa, N., Freeman, P., **Goodell, A. J.**, Kaaya, E. E. & Macfarlane, S. B. An Institutional Research Agenda: Focusing University Expertise in Tanzania on National Health Priorities. *Journal of Public Health Policy* **33 Suppl 1**, S186–201. <http://dx.doi.org/10.1057/jphp.2012.50> (2012).
2. Pemba, S., Macfarlane, S. B., Mpembeni, R., **Goodell, A. J.** & Kaaya, E. E. Tracking University Graduates in the Workforce: Information to Improve Education and Health Systems in Tanzania. *Journal of Public Health Policy* **33 Suppl 1**, S202–15. <http://dx.doi.org/10.1057/jphp.2012.48> (2012).
3. **Goodell, A. J.**, Bloch, E. M., Krause, P. J. & Custer, B. Costs, Consequences, and Cost-Effectiveness of Strategies for Babesia Microti Donor Screening of the US Blood Supply. *Transfusion* **54**, 2245–2257. <http://dx.doi.org/10.1111/trf.12805> (2014).
4. **Goodell, A. J.**, Bloch, E., Simon, M. S., Shaz, B. & Custer, B. Babesia Screening: The Importance of Reporting and Calibration in Cost-Effectiveness Models. *Transfusion* **56**, 774–775. <http://dx.doi.org/10.1111/trf.13436> (2016).
5. **Goodell, A. J.**, Kahn, J. G., Ndeki, S. S., Kaale, E., Kaaya, E. E. & Macfarlane, S. B. J. Modeling Solutions to Tanzania’s Physician Workforce Challenge. *Glob. Health Action* **9**, 31597. <http://dx.doi.org/10.3402/gha.v9.31597> (2016).
6. Mkony, C. A., Kaaya, E. E., **Goodell, A. J.** & Macfarlane, S. B. Where Teachers Are Few: Documenting Available Faculty in Five Tanzanian Medical Schools. *Glob. Health Action* **9**, 32717. <http://dx.doi.org/10.3402/gha.v9.32717> (2016).
7. Vreman, R. A., **Goodell, A. J.**, Rodriguez, L. A., Porco, T. C., Lustig, R. H. & Kahn, J. G. Health and Economic Benefits of Reducing Sugar Intake in the USA, Including Effects via Non-Alcoholic Fatty Liver Disease: A Microsimulation Model. *BMJ Open* **7**, e013543. <http://dx.doi.org/10.1136/bmjopen-2016-013543> (2017).
8. **Goodell, A. J.**, Shete, P. B., Vreman, R., McCabe, D., Porco, T. C., Barry, P. M., Flood, J., Marks, S. M., Hill, A., Cattamanchi, A. & Kahn, J. G. Outlook for Tuberculosis Elimination in California: An Individual-Based Stochastic Model. *PLoS One* **14**, e0214532. <http://dx.doi.org/10.1371/journal.pone.0214532> (2019).
9. Parriott, A., Kahn, J. G., Ashki, H., Readhead, A., Barry, P. M., **Goodell, A. J.**, Flood, J. & Shete, P. B. Modeling the Impact of Recommendations for Primary Care-Based Screening for Latent Tuberculosis Infection in California. *Public Health Reports* **135**, 172S–181S. <http://dx.doi.org/10.1177/0033354920927845> (2020).
10. Testa, S., Kumar, J., **Goodell, A. J.**, Zehnder, J. L., Alexander, K. M., Sidana, S., Arai, S., Witteles, R. M. & Liedtke, M. Prevalence, Mutational Spectrum and Clinical Implications of Clonal Hematopoiesis of Indeterminate Potential in Plasma Cell Dyscrasias. *Seminars in Oncology* **49**, 465–475. <http://dx.doi.org/10.1053/j.seminonc.1.2022.11.001> (2022).

- Hong, H. J., Schmiesing, C. A. & **Goodell, A.J.** Enhancing the Readability of Preoperative Patient Instructions Using Large Language Models. *Anesthesiology* **141**, 608–610. <https://doi.org/10.1097/ALN.0000000000005122> (2024).

Peer-reviewed articles, submitted

- Goodell, A. J.**, Chu, S. N., Rouholiman, D. & Chu, L. F. Augmentation of ChatGPT with Clinician-Informed Tools Improves Performance on Medical Calculation Tasks. *NPJ Digital Medicine (revisions)*. <http://dx.doi.org/10.1101/2023.12.13.23299881> (2023).
- Chu, S. N. & **Goodell, A. J.** Synthetic Patients: Simulating Difficult Conversations with Multimodal Generative AI for Medical Education. *Academic Medicine (revisions)*. <https://doi.org/10.48550/arXiv.2405.19941> (2024).

Peer-reviewed abstracts

- Goodell, A. J.** & Lang, J. *Zooming in on Special Populations: Using Google Maps as an Emergency Preparedness Tool in 64th Annual Conference, Oregon Public Health Association* (Corvallis, OR, 2008).
- Lee, C., Pittard, A. E. I., Soltren, A., **Goodell, A. J.** & Anderson, M. A. *Seroprevalence and Risk Factors for HIV, Hepatitis B, and Syphilis among Pregnant Women Attending an Antenatal Clinic in Guatemala City, 2005-2007 in 17th Annual Conference, Global Health Education Consortium* (Sacramento, CA, 2008).
- Roberts, Z., **Goodell, A. J.** & Lang, J. *Oregon Disaster Evacuation Management: Using Open-Source Software for State-Wide Preparedness in 2010 Annual Conference, Oregon Emergency Management Association* (Hood River, OR, 2010).
- Goodell, A. J.**, Long, J., Koehler, E., Greensweig, T., Ndayizigiye, M., Niyizonkiza, D. & Ntaba, D. *Scaling up: Expanding Community Health Worker Programs for Refugees and Internally Displaced Persons in the Bururi Province, Burundi in 20th Annual Conference, Global Health Education Consortium* (Montreal, Canada, 2011).
- Goodell, A. J.**, Long, J., Koehler, E., Greensweig, T., Ndayizigiye, M., Niyizonkiza, D. & Ntaba, D. *Scaling up: Expanding Community Health Worker Programs for Refugees and Internally Displaced Persons in the Bururi Province, Burundi in 20th Annual Conference, Global Health Education Consortium* (Montreal, Canada, 2011).
- Goodell, A. J.**, Bloch, B., Krause, P. & Custer, B. *Cost-Effectiveness of Screening US Blood Donors for Babesia Microti in 62nd Annual Meeting, American Association of Blood Banks* (Boston, MA, 2012).
- Goodell, A. J.**, Kahn, J. G., Kaale, E., Kaaya, E. & Macfarlane, S. *ICAD: Modeling Solutions to Tanzania's Health Workforce Crisis in University of California Global Health Day* (UC Berkeley, Berkeley, CA, 2012).
- Goodell, A. J.**, Malekinejad, M., Marseille, E., Mirzazadeh, A., McCabe, D., Showstack, J. S., Alistar, S. S. & Kahn, J. G. *Visualizing Global Health Decisions: A Web Tool for HIV Decision-Making in Resource-Constrained Settings in 22nd Annual Conference, Consortium of Universities for Global Health* (Washington, DC, 2013).
- Malekinejad, M., **Goodell, A. J.**, Mirzazadeh, A., Marseille, E. & Kahn, J. G. *Global Health Decisions: A Web-Based HIV Decision-Making Tool in 9th International Congress on Addiction Science* (Tehran, Iran, 2015).
- Goodell, A. J.**, Shete, P. B., Vreman, R., Metcalfe, J., Porco, T. C., Barry, P. M., Flood, J., Marks, S. M., Cattamanchi, A. & Kahn, J. G. *Prospects for Elimination: An Individual-Based Model to Assess TB Control Strategies in California in American Thoracic Society Annual Meeting* (San Francisco, CA, 2016).
- Goodell, A. J.**, Spitznagle, J. C., Israni-Jiang, M., Arakaki, R. Y., Rosenblum, M. D. & Mully, T. W. *Hydroa Vacciniforme-like Lymphoma in a 19-Year-Old Man Born in the United States in American Society of Dermatopathology, Annual Meeting* (Chicago, IL, 2016).
- Goodell, A. J.**, Chung, P., Chu, L., Larson, B., Chu, S. & Rishel, C. *AnesthesiaChat: An Anesthesia-Specific Large Language Model Built from WikiAnesthesia in Annual Meeting, Society for Technology in Anesthesiology* (Houston, TX, 2023).
- Chu, S. N. & **Goodell, A. J.** *Simulating Goals of Care Discussions Prior to Major Surgery Using ChatGPT: A Generative Artificial Intelligence Approach in Annual Conference, Association for Surgical Education* (Orlando, Florida, 2024).

14. Rouholiman, D., **Goodell, A. J.**, Fung, E., Chandrasoma, J. & Chu, L. F. *Open-Source Large Language Models in Anesthesia and Perioperative Medicine: ASA-physical Status Evaluation* in *18th World Congress of Anaesthesiologists* (Singapore, 2024).

Book chapters

1. **Goodell, A. J.** & Lighthall, G. K. *Pulmonary Events* in *Crisis Management in Anesthesiology E-Book: Crisis Management in Anesthesiology E-Book* (editors Gaba, D. M., Fish, K. J., Howard, S. K. & Burden, A.) (Elsevier Health Sciences, 2014).
2. **Goodell, A. J.** & Lighthall, G. K. *Simulation-Based Training for Rapid Response Systems in Medical Education, a Review* in *Textbook of Rapid Response Systems: Concept and Implementation* (editors DeVita, M. A., Hillman, K., Bellomo, R., Odell, M. & Lighthall, G. K.) 3 edition (Springer International Publishing, Cham, Switzerland, In Press).

Digital publications and datasets

1. [dataset] **Goodell, A. J.** & Badson, J. *Open Antibioqram: A User-Friendly Antibiotics Sensitivity Chart (v1.14)* (Zenodo, 2018). <https://doi.org/10.5281/zenodo.10842457>.
2. [dataset] **Goodell, A. J.** *OpenMedCalc: An Open-Source Clinical Calculator API (v0.0.1)* (Zenodo, 2023). <https://doi.org/10.5281/zenodo.10360458>.
3. [dataset] **Goodell, A. J.**, Chu, S., Rouholiman, D. & Chu, L. *Dataset: Large Language Models as Clinical Calculators (v1.1.1)* (Hugging Face Hub, 2023). <https://doi.org/10.57967/hf/1989>.
4. [dataset] Chu, S. N. & **Goodell, A. J.** *Synthetic Patients: Building Educational Virtual Telehealth Visits with Generative AI* (Hugging Face, 2024). <https://doi.org/10.57967/hf/2338>.
5. [dataset] **Goodell, A. J.** *OpenLabel: Printable Anesthesia Syringe Labels Compliant with International Guidelines (V2)* (Zenodo, 2024). <https://doi.org/10.5281/zenodo.10841962>.
6. [dataset] Hong, C. H., Schmiesing, C. A. & **Goodell, A. J.** *Dataset: Large Language Models Improve Readability of Preoperative Patient Instructions* (Hugging Face Hub, 2024). <http://doi.org/10.57967/hf/2155>.

Other publications

1. **Goodell, A. J.** *Feature Photography* (Readers Digest International Edition, 2009).

H. Invited Presentations

Local presentations

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| 1/2011 | Goodell, A. J. Building a Student Movement for Global Health. FACE AIDS Board of Directors Meeting. Lou Henry and Herbert Hoover House, Stanford University. |
| 5/2011 | Walker, P and Graboyes, M and Spencer, P and Goodell, A. J. and Carr, H. Ethics and Global Health Panel. Global Ethics Network Workshop, Carnegie Council for Ethics in International Affairs. University of Oregon. |
| 7/2019 | Thiruvengadam, S., Goodell, A. J. , Swenson, K. Pulmonary Artery Intimal Sarcoma Presenting as Acute Liver Failure and Disseminated Intravascular Coagulation: A Case Report. Resident Lecture Series, Department of Medicine, Stanford School of Medicine |
| 4/2020 | Goodell, A. J. The Right Drug Needs the Right Label: Challenges and Solutions in Medication Errors. Resident Lecture Series, Department of Anesthesiology, Stanford School of Medicine. |

- 2/2021 **Goodell, A. J.** Confirming Endotracheal Intubation with Bedside Ultrasound. Resident Lecture Series, Department of Medicine, Stanford School of Medicine.
- 2/2021 **Goodell, A. J.** Case Presentation: Fibrinolysis for Patients with Intermediate Risk Pulmonary Embolism. Department of Medicine Lecture Resident Series, Stanford School of Medicine.
- 6/2021 **Goodell, A. J.** Efficient Information Technology: High-yield Tips and Tricks for Epic. Residency Program Orientation, Department of Medicine, Stanford School of Medicine
- 7/2022 **Goodell, A. J.** Post-operative Management of Patients with Spinal Cord Injury. Stanford Health Care Post-Anesthesia Recovery Unit Lecture Series, Department of Anesthesiology, Stanford School of Medicine
- 5/2023 **Goodell, A. J.** Caring for the Hospitalized Patient with Spinal Cord Injury. Department of Medicine Lecture Series, Stanford School of Medicine.
- 6/2023 **Goodell, A. J.** Efficiency on the Wards: How to Improve Your Use of Epic and IT Resources. Residency Program Orientation, Department of Medicine, Stanford School of Medicine.
- 3/2024 **Goodell, A. J.,** Hong, C.H. The Deep End: Artificial Intelligence and Anesthesia. Resident Lecture Series, Department of Anesthesiology, Stanford School of Medicine. <https://informatics.stanford.edu/ca2-lecture>
- 4/2024 **Goodell, A. J.** Cardiovascular Preoperative Risk Assessment for Non-Cardiac Surgery. Libero Resident Lecture Series, Department of Anesthesiology, Stanford School of Medicine. <https://alx.gd/cv-risk-talk>
- 4/2024 Chu, L.F., **Goodell, A. J.,** Rouholiman, D. Exploring the Potential of Large Language Models in Clinical Anesthesiology Practice. Grand Rounds, Department of Anesthesiology, Stanford School of Medicine. AJG component available here: [urlhttps://alx.gd/grand-rounds](https://alx.gd/grand-rounds)
- 5/2024 **Goodell, A. J.** Machine Learning for Epidemiologic Modeling. Disease Modeling Group, UCSF Center for Aging, University of California San Francisco. <https://alx.gd/ml-for-epi-modeling>
- 6/2024 **Goodell, A. J.,** Rouholiman, D., Chu, L. F. Evaluating Anesthesia Knowledge in Large Language Models. Data Studio. Department of Biomedical Data Science, Stanford School of Medicine. <https://alx.gd/data-studio-presentation>
- 7/2024 **Goodell, A. J.,** Hong, C.H. Introduction to Python and Data Analysis Using Large Language Models. Resident Lecture Series, Department of Anesthesiology, Stanford School of Medicine.
- 7/2024 **Goodell, A. J.** Generative AI in Healthcare Simulation. Lab of Jonathan Chen. Division of Biomedical Data Science, Department of Medicine, Stanford School of Medicine. <https://alx.gd/healthcare-simulation>
- 8/2024 **Goodell, A. J.** Cardiovascular Risk Calculation in Non-Cardiac Surgery. Libero Resident Lecture Series, Department of Anesthesiology, Stanford School of Medicine.

National presentations:

- 6/2016 Goodell, A.J., Shete, P.B., Vreman, R., Metcalfe, J., Porco, T.C., Barry, P.M., Flood, J., Marks, S.M., Cattamanchi, A., Kahn, J.G. Tuberculosis Control via LTBI Test and Treat in California: Cost-effectiveness and Potential for Elimination. Tuberculosis Epidemiologic Studies Consortium, Centers for Disease Control and Prevention, Atlanta, Georgia.
- 11/2023 Chu L.F., Chandrasoma, J., Hicks, M., Goodell A.J., Wilson, T. Kurup, V. The Digital Bridge in Anesthesiology Education: Introducing ChatGPT to Your Team. Society for Education in Anesthesia Spring Meeting, Chicago, Illinois.
- 4/2024 Chu L.F., Chandrasoma, J., Goodell A.J. Polishing Your Educator Toolkit with Data Science Skills You Never Knew You Needed. Society for Education in Anesthesia Spring Meeting, Chicago, Illinois.