

**BIOGRAPHICAL SKETCH**

Provide the following information for the Senior/key personnel and other significant contributors.  
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Lum, Hillary Day

eRA COMMONS USER NAME (credential, e.g., agency login): Hillary.Lum

POSITION TITLE: Assistant Professor of Medicine

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE	Completion Date MM/YYYY	FIELD OF STUDY
Northwestern University, Evanston, IL	BA	06/2000	Biology
University of Wisconsin School of Medicine and Public Health, Madison, WI	MD, PhD	05/2008	Cellular and Molecular Biology
University of Pittsburgh Medical Center, Pittsburgh, PA	Resident	06/2011	Internal Medicine
University of Colorado School of Medicine, Aurora, CO	Fellow	06/2012	Geriatric Medicine
University of Colorado School of Medicine, Aurora, CO	Fellow	06/2013	Hospice and Palliative Medicine

**A. Personal Statement**

As a Board-certified geriatrician, palliative medicine physician, and clinician scientist, I am dedicated to improving advance care planning and quality of life for older adults with serious illnesses. I have been continuously funded since 2013, including through the National Institute on Aging Beeson Emerging Leaders Career Development K76 Award. My work focuses on designing and testing the effectiveness of new advance care planning strategies to improve patient-centered outcomes. I have clinical experience as a primary care geriatrician and research expertise in advance care planning, qualitative methods and implementation science.

My work includes the stakeholder-engaged design and efficacy testing of the Engaging in Advance Care Planning Talks (ENACT) Group Visits intervention in six primary care clinics, inclusive of individuals with cognitive impairment. I also led the refinement of the ENACT Group Visits intervention for individuals with amnesic Mild Cognitive Impairment, a population that is at high risk for developing Alzheimer's Disease. As an early stage investigator, evidence of my growing independence can be seen through funding from the National Institute on Aging, Department of Veterans Affairs, National Palliative Care Research Center, NextFifty Initiative, and the Colorado Health Foundation. As evidence of my leadership in team science, I have published more than 50 studies in geriatrics, palliative care and primary care.

- a. **Lum HD**, Sudore RL, Matlock DD, Juarez-Colunga E, Jones J, Nowels M, Schwartz RS, Kutner JS, Levy CR. A Group Visit Initiative Improves Advance Care Planning Documentation among Primary Care Older Adults. *Jour Am Board Fam Med*, 2017 Jul-Aug;30(4):480-490. PMID: [PMC5711729](#)
- b. **Lum HD**, Jones J, Matlock DD, Glasgow RE, Lobo I, Levy CR, Schwartz RS, Sudore RL, Kutner JS. Advance care planning (ACP) meets group medical visits: Feasibility of promoting ACP conversations. *Ann of Fam Med*. 2016 Mar;14(2):125-32. PMID [PMC4781515](#)
- c. Dukes JD, Brungardt A, **Lum HD**. Using Group Visits to Teach Residents about Advance Care Planning. *J Palliat Med*. 2017 Nov 1; 20(11):1187-1188. PMID: [PMC5672618](#)
- d. Zapata C, Wistar E, Horton C, **Lum HD**, Sudore RL. A Video-based Advance Care Planning (ACP) Website to Facilitate Group Visits for Diverse Older Adults is Feasible and Improves ACP Engagement. *J Palliat Med*. 2018 Jun;21(6):853-856. PMID: 29461918 PMID: [PMC6037186](#)

## B. Positions and Honors

### Positions and Employment

2013-present Assistant Professor, Division of Geriatric Medicine, Dept of Medicine, U of Colorado  
2015-present Core Faculty, VA Eastern Colorado Geriatric Research Education and Clinical Center (GRECC)

### Board Certifications

2011-present Colorado Medical License  
2011-present Diplomat, American Board of Internal Medicine  
2012-present Geriatric Medicine Certification  
2014-present Hospice and Palliative Medicine Certification

### Other Experience and Professional Memberships

2008 - 2012 Member, Society of General Internal Medicine  
2009 - Member, American Geriatrics Society  
2009 - Member, American Academy of Hospice and Palliative Medicine  
2013 - 2014 Co-Mentor Program, Colorado Clinical and Translational Institute, University of Colorado  
2014 - 2018 Member, American Medical Association  
2014 - Member, Palliative Care Research Cooperative Group  
2015 - 2019 Member, Public Policy Committee, American Academy of Hospice and Palliative Medicine  
2015 - 2016 Fellow, Health and Aging Policy Fellows Program  
2015 - Member, Advance Care Planning International (ACP-i) Society  
2016 - Member, North American Primary Care Research Group

### Honors

2008 General Internal Medicine Outstanding Student, University of Wisconsin  
2010 Resident Poster Award, Research Category, 2nd Prize. AGS Annual Meeting  
2011 Senior Presentation, UPMC Internal Medicine Residency  
2011 Department of Medicine Frank M Mateer Senior Resident Award, UPMC  
2012 - 2013 Hearst Foundation, University of Colorado Hospice and Palliative Medicine Fellowship  
2014 - 2015 Scholar, American Academy of Hospice and Palliative Medicine Research Scholar  
2014 - 2016 Scholar, Clinical Faculty Scholars Program, Colorado Clinical and Translational Institute  
2015 Poster Award, American Academy of Hospice and Palliative Medicine Annual Assembly  
2018 Rising Star, University of Colorado Department of Medicine  
2019 Dorothy Dillon Eweson Lecture Series on the Advances in Aging Research, AFAR

## C. Contributions to Science

1. Developing and implementing advance care planning interventions in older adults: My expertise includes developing interventions with multi-level stakeholder input and evaluations using qualitative and implementation science methods. As described above, I developed an Advance Care Planning Group Visit intervention to improve ACP in primary care settings. The intervention uses Collaborative Learning Theory to promote interactive discussions that facilitate patient-centered ACP behavior change processes and actions. I also led the implementation of health care system-wide tools through the electronic health record patient portal that serves more than 300,000 patients. With Dr. Nowels (co-investigator), we have conducted multiple studies to understand the advance care planning needs of primary care settings in Colorado, the US and internationally.
  - a. **Lum HD**, Brungardt A, Jordan S, Phimpasone-Brady P, Schilling LM, Lin CT, Kutner JS. Design and Implementation of Patient Portal-based Advance Care Planning Tools. Journal of Pain and Symptom Management, Vol. 57, Issue 1, p112–117.e2. [PMID: 30595147](#)
  - b. Jordan SR, Brungardt A, Phimpasone-Brady P, **Lum HD**. Patient Perspectives on Advance Care Planning via a Patient Portal. Am J Hosp Palliat Care. 2019 Feb 25;1049909119832820. doi: 10.1177/1049909119832820. [PMID: 30803245](#)
  - c. Sable-Smith A, Arnett KR, Nowels MA, Colborn K, **Lum HD**, Nowels D. Interactions with the Healthcare System Influence Advance Care Planning Activities: Results From a Representative Survey in 11 Developed Countries. Family Practice. 2017 Nov 13. PMID: [PMC5965096](#)

- d. Arnett K, Sudore RL, Nowels D, Feng CX, Levy CR, **Lum HD**. Advance Care Planning: Understanding Clinical Routines and Experiences of Interprofessional Team Members in Diverse Health Care Settings. *Am J Hosp Palliat Care*. 2017 Dec;34(10):946-953. PMID: [PMC5851789](#)
2. Defining and understanding the science of advance care planning decision making for older adults: As part of an international group of interdisciplinary advance care planning research, policy, and clinical experts including Dr. Sudore (consultant), I participated in two large studies to define advance care planning and develop an organizing framework of advance care planning outcomes. Furthermore, I have led studies to better understand the advance care planning behavior change, as well as contextual factors and perspectives of multi-level stakeholders involved in advance care planning. These studies have been among older adults in various settings, including skilled nursing facility and community-based settings.
    - a. Sudore RL, **Lum HD**, You JJ, Hanson LC, Meier DE, Pantilat SZ, Matlock DD, Rietjens JA, Korfage IJ, Ritchie CS, Kutner JS, Teno JM, Thomas J, McMahan RD, Heyland DK. Defining Advance Care Planning for Adults: A Consensus Definition from a Multidisciplinary Delphi Panel. *J Pain Symptom Manage*. 2017 May;53(5):821-832.e1. PMID: [PMC5728651](#)
    - b. Sudore RL, Heyland DK, **Lum HD**, Rietjens JAC, Korfage IJ, Ritchie CS, Hanson LC, Meier DE, Pantilat SZ, Lorenz K, Howard M, Green MJ, Simon JE, Feuz MA, You JJ. Outcomes that Define Successful Advance Care Planning: A Delphi Panel Consensus. *J Pain Symptom Manage*. 2018 Feb;55(2):245-255.e8. PMID: [PMC5794507](#)
    - c. **Lum HD**, Barnes D, Katen MT, Shi Y, Boscardin J, Sudore RL. Improving A Full Range of Advance Care Planning Behavior Change and Action Domains: the PREPARE Randomized Trial. *J Pain Symptom Manage*. 2018 Jun 27. PMID: [PMC6138565](#)
    - d. **Lum HD**, Obafemi O, Dukes J, Nowels MA, Samon K, Boxer R. Use of Medical Orders for Scope of Treatment for Heart Failure Patients During Post-Acute Care in Skilled Nursing Facilities. *J Am Med Dir Assoc*. 2017 Jul 6. pii: S1525-8610(17)30300-6. PMID: [PMC5730449](#)
  3. Improving communication for advance care planning and palliative care: I actively lead and collaborate in studies focusing on communication needs of individuals and caregivers affected by serious or life-limiting illnesses, including individuals with Parkinson's disease and dementia. I participated in a role-play-based motivational interviewing pilot to explore the benefit of this approach for patients involved in palliative care conversations. I am currently co-Principal Investigator on a NextFifty Initiative grant to adapt and implement an Advance Care Planning Community Guide Certification program for older LGBT individuals in Colorado. This work represents my involvement in community and stakeholder-engaged research that aims to highlight the perspectives of community lay persons and care partners in advance care planning.
    - a. **Lum HD**, Jordan SR, Brungardt A, Ayele R, Katz M, Miyasaki JM, Hall A, Jones J, Kluger B. Framing Advance Care Planning in Parkinson's Disease: Patient and Care Partner Perspectives. *Neurology* 2019;92:1-9. doi: 10.1212/WNL.0000000000007552. PMID: [31028124](#)
    - b. Pollak KI, Jones J, **Lum HD**, De La Cruz S, Felton S, Gill A, Kutner JS. Patient and Caregiver Opinions of Motivational Interviewing Techniques in Role-Played Palliative Care Conversations: A Pilot Study. *J Pain Symptom Manage*. 2015 Jul;50(1):91-8. PMID: [PMC4492861](#)
    - c. Somes E, Dukes J, Brungardt A, Jordan S, DeSanto K, Jones CD, Sanghvi UJ, Breathett K, Jones J, **Lum HD**. Perceptions of trained laypersons in end-of-life or advance care planning conversations: A qualitative meta-synthesis. *BMC Palliat Care*. 2018 Aug 6;17(1):98. PMID: [PMC6080535](#)
    - d. Candrian C, Lasker Hertz S, Matlock D, Flanagan L, Tate C, Kutner JS, **Lum HD**. Development of a Community Advance Care Planning Guides Program and the RELATE Model of Communication. *Am J Hosp Palliat Care*. 2019 Apr 28;:1049909119846116. doi: 10.1177/1049909119846116. PMID: [31030524](#).
  4. Understanding needs of community-dwelling older adults: I have conducted multiple survey-based and secondary data analyses related to understanding the needs of older adults, especially related to safety and issues that can adversely affect living independently at home. I conducted two secondary analyses using the National Survey of Residential Care Facilities to understand pandemic influenza preparedness and older drivers who live in residential care facilities. I served as a consultant on a Colorado Department

of Public Health and Environment study that surveyed older Coloradans on their perspectives related to medical and recreational marijuana use. This study has resulted in three published studies.

- a. **Lum HD**, Mody L, Levy CR, Ginde AA. Pandemic influenza plans in residential care facilities. J Am Geriatr Soc. 2014 Jul;62(7):1310-6. PMID: [PMC4107066](#).
- b. **Lum HD**, Ginde AA, Betz ME. Older adult drivers living in residential care facilities. Ann Longterm Care. 2015 Jul;23(7):21-26. PMID: [PMC4564119](#)
- c. **Lum HD**, Flaten HK, Betz ME. Gun Access and Safety Practices among Older Adults. Curr Gerontol Geriatr Res. 2016;2016:2980416. Epub 2016 Feb 2. PMID: 26949391 [PMC4754461](#)
- d. **Lum HD**, Arora K, Croker JA, Qualls SH, Schuchman M, Bobitt J, Milavetz G, Kaskie B. Patterns of Marijuana Use and Health Impact: A Survey Among Older Coloradans. Gerontol Geriatr Med. 2019 Apr 26;5:2333721419843707. doi: 10.1177/2333721419843707. PubMed PMID: 31065574. [PMC6487769](#)

5. Understanding palliative care and end-of-life needs for patients with serious illness: The palliative care needs of patients with symptomatic heart failure are relatively under studied. I led collaborative studies to understand the perspectives of hospice clinicians related to patients with heart failure. I also initiated studies on patient and caregiver outcomes related to health status, symptom burden, and caregiver benefit finding. In a secondary analysis of patient and caregiver dyads, we found that caregiver burden and caregiver benefit finding were associated with relationship quality, suggesting possible opportunities to target the patient- caregiver relationship and improve other patient and caregiver outcomes. Among Veterans with heart failure and reduced health status, we identified high physical symptom burden, depression, and medical comorbidities as key factors associated with poor heart failure-specific health status over one year.

- a. **Lum HD**, Jones J, Lahoff D, Allen LA, Bekelman DB, Kutner JS, Matlock DD. Unique challenges of hospice for patients with heart failure: A qualitative study of hospice clinicians. Am Heart J. 2015 Sep;170(3):524-530. PMID: [PMC5730448](#)
- b. **Lum HD**, Horney C, Koets D, Kutner JS, Matlock DD. Availability of Heart Failure Medications in Hospice Care. Am J Hosp Palliat Care. 2015 Aug 31. PMID: [PMC5730448](#)
- c. **Lum HD**, Lo D, Hooker S, Bekelman DB. Caregiving in heart failure: Relationship quality is associated with caregiver benefit finding and caregiver burden. Heart Lung. 2014 Jul-Aug;43(4):306-10. PMID: [PMC5711727](#)
- d. **Lum HD**, Carey EP, Fairclough D, Plomondon, ME, Hutt E, Rumsfeld JS, Bekelman DB. Burdensome physical and depressive symptoms predict heart failure-specific health status over 1 year. J Pain Symptom Manage. 2016 Feb 24. pii: S0885-3924(16)00069-5. PMID: [PMC5711728](#)

Complete List of Published Work in MyBibliography:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/1lkZhJhA8v9ku/bibliography/40015982/public/?sort=date&direction=ascending>

**D. Additional Information: Research Support and/or Scholastic Performance**

**Ongoing Research Support**

K76 AG054782	Lum (PI)	9/15/2016-5/31/2020
National Institutes on Aging, Paul B. Beeson K76 Career Development Award		
Refining An Advance Care Planning Group Visit Intervention – A Novel Intervention To Engage Older Adults In Advance Care Planning		
This study will standardize, adapt, and pilot test the Advance Care Planning Group Visit intervention to improve opportunities for older adults to receive medical care that is consistent with their preferences.		

K76 AG054782 - supplement	Lum (PI)	10/1/2018-5/31/2019
National Institute of Aging		
This supplement will refine and adapt the Advance Care Planning Group Visit intervention for individuals with mild cognitive impairment and their study partners.		

N/A	Lum (Co-PI)	4/01/2018-3/30/2020
NextFifty Initiative		

Implementation and Dissemination of an Advance Care Planning Volunteer Certification Program for LGBT Individuals

This project implements an Advance Care Planning communication training program for volunteers to support older LGBT individuals in Colorado.

N/A Hung (PI) 10/01/2017-9/30/2019  
Department of Veterans Affairs, Office of Rural Health  
GRECC Connect  
This clinical demonstration project expands geriatric telehealth for rural Veterans in Eastern Colorado Health Care System, in partnership with the national GRECC Connect initiative.  
Role: Site Director

N/A Schwartz (PI) 06/01/15 – 09/30/2019  
Department of Veterans Affairs,  
Geriatric Research Education and Clinical Center (GRECC)  
The goal of this GRECC is to improve the health of older Veterans through development of innovative research, clinical and educational initiatives.  
Role: Core Faculty

**Completed Research Support**

7761 Lum (PI) 10/1/2016-1/31/2019  
Colorado Health Foundation  
Leveraging Patient Portal Use to Increase Patient Engagement in Advance Care Planning  
This clinical demonstration project aims to improve advance care planning (ACP) through the implementation of patient portal system infrastructure to provide person-centered ACP education and engagement.

U24NR014637 Lum (PI, pilot award) 7/01/2017-6/30/2018  
National Institute of Nursing Research  
Palliative Care Research Cooperative - Investigator Development Pilot Award  
Understanding advance care planning in patients and care partners living with Parkinson's disease  
This qualitative study will describe the perspectives of Parkinson's disease patients and caregivers related to advance care planning.

N/A Qualls (PI) 4/1/2017-3/30/2018  
Colorado Dept of Public Health and Environment;  
Older Coloradans and Marijuana: A Public Health Problem or Policy Alternative  
Role: Consultant

N/A Lum (PI) 7/1/2015-6/30/2017  
National Palliative Care Research Center (Junior Faculty Career Development Award)  
Refinement of an Advance Care Planning Group Medical Visit to Enhance ACP Engagement and Implementation  
This project identified core components of the ACP Group Medical Visit and patient-centered outcomes for future feasibility testing of the model.