Linda S. Ruehlman, Ph.D. Psychologist CEO and Director of Research Goalistics, LLC 8621 South Maple Avenue Tempe, Arizona 85284 (602) 751-5433 Linda.Ruehlman@goalistics.com

#### **EDUCATION/TRAINING**

University of Cincinnati B.A. 1978 Psychology University of Cincinnati M.A. 1981 Experimental Psychology Arizona State University Ph.D. 1986 Social Psychology

#### PROFESSIONAL EXPERIENCE

CEO and Director of Research, Goalistics, LLC, Tempe, Arizona 2008-present

General Partner and Director of Research, Psychological Assessment and Training, LLC, Tempe, Arizona 2006-2010

General Partner and Director of Research, Consultants in Behavioral Research, Tempe, Arizona 1985-2010

Instructor, Arizona State University, Tempe, Arizona. 1996-2007

Member, Mental Health Small Business Grant Review Panel, National Institute of Mental Health. 1994-1998

Adjunct Assistant Professor, Arizona State University, Tempe, Arizona. 1985-1995

### **RESEARCH GRANTS**

Principal Investigator: "Development of a Psychosocial Screening Instrument"; Phase I Small Business Innovation Research Grant, National Institute of Mental Health (1 R43 MH 44010-01A1). 3/1/89-8/31/89. **\$39,620**.

Principal Investigator: "Development of the Multidimensional Health Profile"; Phase II Small Business Innovation Research Grant, National Institute of Mental Health (2 R44 MH44010). 8/15/91-7/31/93. **\$421,843**.

Principal Investigator: "Work Goals and Health Outcomes: A Goal Systems Analysis"; Phase I Small Business Innovation Research Grant, National Institute of Mental Health (1 R43 MH50398). 9/30/92-3/31/93. **\$49,998**.

Principal Investigator: "Development of the Comprehensive Pain Assessment System", Phase I Small Business Innovation Research Grant, National Institute of Neurological Disorders and Stroke (1 R43 NS38772). 7/20/99-7/15/2000. **\$112,977**.

Principal Investigator: "Development of the Gambling Practices Scale", Phase I Small Business Innovation Research Grant, National Institute of Mental Health (1 R43 MH 64842), 5/01/01-11/30/01, **\$126,347**.

Principal Investigator: "Development of the Comprehensive Pain Assessment System", Phase II Small Business Innovation Research Grant from the National Institute of Neurological Disorders and Stroke (2 R44 NS3 8772), 03/07/2002-02/29/2004. **\$962,932**.

Principal Investigator: "Development of the Comprehensive Pain Assessment System", Supplement to Phase II Small Business Innovation Research Grant, National Institute of Neurological Disorders and Stroke (2 R44 NS3 8772-03S1), 09/24/2003-02/29/2004. **\$62,500**.

Principal Investigator: "Development of the Pain Self-Management Program", Phase I Small Business Innovation Research Grant, National Institute of Neurological Disorders and Stroke (1 R43 NS048743), 10/1/2004-3/31/2005. **\$140,360.** 

Principal Investigator: "Development of the Pain Self-Management Program", Phase II Small Business Innovation Research Grant from the National Institute of Neurological Disorders and Stroke (2 R44 NS048743), 09/15/2007-03/31/2010. **\$928,703.** 

Principal Investigator: "Development of the Pain Self-Management Program", Supplement Small Business Innovation Research Grant from the National Institute of Neurological Disorders and Stroke (3 R44NS048743-04S1), 04/01/2009-03/31/2010, **\$35,280** 

Principal Investigator: "Development of the Depression Self-Management Program", Phase I Small Business Innovation Research Grant, National Institute of Mental Health (1 R43 MH087006), 05/18/2010-01/17/2011, **\$176,501** 

Principal Investigator: "Control Your Cravings: A Web-Based Transdiagnostic Self-Management Program", Phase I Small Business Innovation Research Grant, National Institute on Drug Abuse (1R43DA033010), 07/15/2012 – 12/31/2012, **\$219,717**.

Principal Investigator: "Development of the Partner Pain Support Program", Phase I Small Business Innovation Research Grant, National Institute of Nursing Research (1R43NR014382-01A1), 02/07/2014-09/30/2014, **\$223,149**.

Principal Investigator: "Development of the Building Efficacy for Successful Tapering (BEST) Program", Phase I Small Business Innovation Research Grant, National Institute on Drug Abuse (1R43DA040988-01A1), 05/01/2017-01/31/2018. **\$225,473**.

Co-Investigator: "Equalizing Access to Non-opioid Strategies with Community-embedded Online Pain Management Tools", National Science Foundation (2228582), 10/01/2022-03/31/2023. **\$49,999.** 

Principal Investigator: "Training Psychologists and Nurse Practitioners in the Use of an Evidence-Based Online Pain Self-Management Program: Leveraging the Power of Expert Guidance and Telehealth", National Institute of Mental Health (1R43MH135524-01A1), 08/01/2023-07/31/2025. **\$305,909.** 

### OTHER AWARDS (support from NIH for Commercialization of Small Business Innovation Research [SBIR]-developed products)

National Institutes of Health, Niche Assessment Program Award for the "Development of the Chronic Pain Management Program", 2005.

National Institutes of Health, NIH Commercialization Assistance Program Award for "Development of the Pain Self-Management Program", 2011-2012.

National Institutes of Health, Niche Assessment Program Award for the "Development of the Building Efficacy for Successful Tapering (BEST) Program", 2018.

# **CONTRACTS**

Inland Northwest Community Foundation. Marian Wilson (PI). "Testing an Internet-based Depression Management Program for Patients with Chronic Illnesses and Depressive Symptoms". Contract to provide program support and subscriptions to the Goalistics "Think Clearly About Depression Program". 2015, **\$1,600** 

Paradigm Management Services. Contract to provide program support and subscriptions to the Goalistics "Chronic Pain Management Program" for injured workers. 2016, **\$1,400** 

Washington State University Alcohol and Drug Abuse Research Program. Marian Wilson (PI). Internet-based Pain Self-Management for Persistent Pain Populations on Methadone Maintenance". Contract to provide program support and subscriptions to the Goalistics "Chronic Pain Management Program". 2015-2016, **\$5,100** 

Opioid Post-Marketing Requirement Consortium (OPC). "A randomized, Double-Blind, Placebo-Controlled, Clinical Trial of Structured Opioid Discontinuation Versus Continued Opioid Therapy in Suboptimal and Optimal Responders to High-Dose Long-Term Opioid Analgesic Therapy for Chronic Pain". Contract to provide custom software development, program support, and subscriptions to the Goalistics "Chronic Pain Management Program". 2016-2018, **\$189,905**  Washington State University Alcohol and Drug Abuse Program and Northwest Spine and Pain Treatment. Marian Wilson (PI). Feasibility and Receptivity of a Health Coach to Increase Engagement in Online Pain Self-Management. Contract to provide program support and subscriptions to the Goalistics "Chronic Pain Management Program". 2017, **\$1,000** 

University of Cincinnati. Theresa Winhusen (PI). "EMPOWER: Evaluating the Ability to Reduce Morphine Equivalent Dose for Chronic Pain Patients Receiving Opioid-Therapy Through a Web-Based E-Health Self-Management Program: A Randomized Multi-Site Clinical Trial. Grant #1R01DA044248 – 01. Contract to provide custom software development, program support, and subscriptions to the Goalistics "Chronic Pain Management Program". 2017-2021, **\$76,592** 

Washington State University. Marian Wilson (PI). "Resources and Education Leading to Improved Pain Care Equity for Washingtonians", a grant funded by the Washington State Health Care Authority. Contract to Goalistics: #SPC006205. Contract to provide consultation in the development of a website to provide pain management education and resources to persons with pain, family/friends, and health care providers in the state of Washington. 11/1/2023 - 6/30/2025, **\$80,000**.

# PUBLICATIONS (in chronological order)

Sosis, R., Karoly, P., & Ruehlman, L. (1980). Perceived treatment success with involuntary clients: An exploratory study. *Psychological Reports, 46*, 907-910.

Karoly, P., & Ruehlman, L. (1982). Gender differences in adolescents' reports of self-control problems. *Cognitive Therapy and Research, 6*, 235-237.

Karoly, P. & Ruehlman, L. (1983). Affective meaning and depression: A semantic differential analysis. *Cognitive Therapy and Research*, *7*, 41-50.

Ruehlman, L., West, S., & Pasahow, R. (1985). Depression and evaluative schemata. *Journal of Personality*, *53*, 46-92.

Ruehlman, L. (1985). Depression and affective meaning for current concerns. *Cognitive Therapy and Research, 9*, 553-560.

Ruehlman, L. & Wolchik, S.A. (1988). Personal goals and interpersonal support and hindrance as factors in psychological distress and well-being. *Journal of Personality and Social Psychology*, *55*, 293-301.

Wolchik, S.A., Ruehlman, L., Braver, S., & Sandler, I. (1989). Social support of children of divorce: Direct and stress buffering effects. *American Journal of Community Psychology*, *17*, 485-501.

Ruehlman, L. & Karoly, P. (1991). With a little flak from my friends: Development and Preliminary validation of the Test of Negative Social Exchange (TENSE). *Psychological Assessment, 3*, 97-104.

Okun, M., Ruehlman, L., & Karoly, P. (1991). Application of investment theory to predicting part-time community college student intent and institutional persistence/departure behavior. *Journal of Educational Psychology*, *83*, 212-220

Karoly, P. & Ruehlman, L. (1995). Goal cognition and its clinical implications: Development and preliminary validation of four motivational assessment instruments. *Assessment, 2,* 113-129.

Lecci, L., Karoly, P., Ruehlman, L., & Lanyon, R. (1996). Goal-relevant dimensions of hypochondriacal tendencies and their relation to symptom manifestation and psychological distress. *Journal of Abnormal Psychology, 105,* 42-52.

Karoly, P. & Ruehlman, L. (1996). The motivational implications of pain: Chronicity, psychological distress, and work goal construal in a national sample of adults. *Health Psychology*, *15*, 383-390.

Ruehlman, L., Lanyon, R.I., & Karoly (1998). *Multidimensional Health Profile: Professional Manual.* Odessa, FL: Psychological Assessment Resources.

Ruehlman, L., Lanyon, R.I., & Karoly (1998). *Multidimensional Health Profile: Scoring and Interpretive Program for Windows*, version 1. Odessa, FL: Psychological Assessment Resources.

Ruehlman, L. Lanyon, R., & Karoly, P., (1999). Development and validation of the Multidimensional Health Profile, Part I: Psychosocial Functioning. *Psychological Assessment, 11*, 166-176.

Finch, J., Okun, M., Pool, G., & Ruehlman, L. (1999). A comparison of the influence of conflictual and supportive social interactions on psychological distress. *Journal of Personality*, *67*, 581-621.

Okun, M., Ruehlman, L., Karoly, P., Lutz, R., Fairholme, C., Schaub, R. (2003). Social support and social norms: Do both contribute to predicting leisure-time exercise? *American Journal of Health Behavior* 27, 493-507.

Ruehlman, L. S., Karoly, P., & Newton, C., & Aiken, L. S. (2005). The development and preliminary validation of a brief measure of chronic pain impact for use in the general population. *Pain, 113*, 1-10.

Ruehlman, L. S., Karoly, P., & Newton, C. (2005). Comparing the experiential and psychosocial dimensions of chronic pain in African-Americans and Caucasians: Findings from a national community sample. *Pain Medicine*, *6* (1), 49-60.

Karoly, P., Ruehlman, L. S., & Lanyon, R. I. (2005). The assessment of adult health care orientation: Development and preliminary validation of the Multidimensional Health Profile – Health Functioning Index (MHP-H). *Journal of Clinical Psychology in Medical Settings,12 (1)*, 79-91.

Karoly, P., Ruehlman, L. S., Okun, M. A., Lutz, R. S., Newton, C., & Fairholme, C. (2005).

Perceived self-regulation of exercise goals and interfering goals among regular and irregular exercisers: A life space analysis. *Psychology of Sport and Exercise, 6*, 427-442.

Ruehlman, L., Karoly, P., Newton, C., & Aiken, L. (2005). The Development and Preliminary Validation of the Profile of Chronic Pain: Extended Assessment Battery. *Pain 118*, 380-389.

Karoly, P. & Ruehlman, L. (2006). Psychological "resilience" and its correlates in chronic pain: Findings from a national community sample. *Pain*, *123*, 90-97.

Lanyon, R., Maxwell, B., Karoly, P., & Ruehlman, L. (2006). Utility of the Multidimensional Health Profile – Psychosocial Functioning Scales (MHP-P) for assessing psychosocial adjustment in gastric bypass surgery patients. *Journal of Clinical Psychology in Medical Settings, 13*, 57-66.

Ruehlman, L. & Karoly (2006). *Profile of Chronic Pain: Screen - Professional Manual.* Tempe, AZ: Goalistics, LLC.

Ruehlman, L. & Karoly (2006). *Profile of Chronic Pain: Extended Assessment Battery – Professional Manual.* Tempe, AZ: Goalistics, LLC.

Karoly, P., Ruehlman, L., Aiken, L., Todd, M. & Newton, C. (2006). Evaluating chronic pain impact among patients in primary care: Further validation of a brief assessment instrument. *Pain Medicine*, *7*, 289-298.

Okun, M., Fairholme, C., Karoly, P., & Ruehlman, L. (2006). Academic goals, goal process cognition, and exam performance among college students. *Learning and Individual Differences, 16*, 255-265.

Karoly, P. & Ruehlman, L. (2007). Psychosocial aspects of pain-related life task interference: An exploratory analysis in a general population sample. *Pain Medicine*, *8*(7), 563-572.

Lanyon, R.I., Maxwell, B.M., Karoly, P. & Ruehlman, L. (2007). Concurrent validity of the Multidimensional Health Profile – Health Functioning Scales (MHP-H) in the pre-operative Assessment of applicants for gastric bypass surgery. *Journal of Clinical Psychology in Medical Settings*, *14(1)*, 41-49.

Karoly, P., Okun, M.A., Ruehlman, L., & Pugliese, J.A. (2008). The impact of goal cognition and pain severity on disability and depression in adults with chronic pain: An examination of direct effects and mediated effects via pain-induced fear. *Cognitive Therapy and Research, 32, 418-433.* 

Ruehlman, L., Karoly, P., & Taylor, A. (2008). Perceptions of chronic pain's interference with sexual functioning: The role of gender, treatment status, and psychosocial factors. *Sexuality and Disability*, *26*(*3*), 123-136.

Okun, M., Levy, R., Karoly, P., & Ruehlman, L. (2009). Dispositional happiness and college student GPA: Unpacking a null relation. *Journal of Research in Personality, 43,* 711-715.

Ruehlman, L., Karoly, P., & Pugliese, J.A. (2010). Psychosocial correlates of chronic pain and depression in young adults: Further evidence of the utility of the Profile of Chronic Pain: Screen (PCP: S) and the Profile of Chronic Pain Extended Assessment Battery (PCP: EA). *Pain Medicine*, 11, 1546-1553.

Ruehlman, L., Karoly, P., & Enders, C. (April 2011). Evaluation of the online chronic pain management program. *Journal of Pain*, *Volume 12, Issue 4, Supplement 1*, Page P73.

Ruehlman, L., Karoly, P., & Enders. (2012). A Randomized Controlled Evaluation of an Online Chronic Pain Self Management Program. *Pain, 153,* 319-330.

Caumo, W., Ruehlman, L. Karoly, P, Sehn, F, Vidor, L.P., Dall-Ágnol, L., Chassot, M., Torres, I.L. (2013). Cross-cultural adaptation and validation of the Profile of Chronic Pain: Screen for a Brazilian population. *Pain Medicine*, *14(1)*, 52-61.

Karoly, P., Ruehlman, L., Okun, M. (2013). Psychosocial and Demographic Correlates of Employment versus Disability Status in a National Community Sample of Adults with Chronic Pain: Toward a Psychology of Pain Presenteeism. *Pain Medicine*. *14(11)*, 1698-707.

Mazza GL, Enders CK, Ruehlman L. (2015). Addressing item-level missing data: A comparison of proration and full information maximum likelihood estimation. *Multivariate Behavioral Research*, 50(5): 504-519.

Mun, C. J. Karoly, P. Ruehlman, L. & Kim, H. (2016). Borderline personality features and pain severity: Exploring the mediational role of depression and catastrophizing. *Journal of Social and Clinical Psychology*, *35*, 386-400.

Mun, C.J., Ruehlman, L., & Karoly, P. (2020). Examining the adjustment patterns of adults with multiple chronic pain conditions and multiple pain sites: More pain, no gain. *Journal of Pain, 21, 108-120.* 

Vizcaino, M., Ruehlman, L., Karoly, P., Shilling, K., Berardy, A., Lines, S., Wharton, C.M. (2020). A goal-systems perspective on plant-based eating: keys to successful adherence in university students. *Public Health Nutrition,* June, 1-9.

Ruehlman, L. & Karoly, P. (2022). Adherence versus striving to adhere to vegan, vegetarian, or pescatarian diets: Applying a goal-centered, self-regulatory framework. *Journal of Health Psychology*, Aug;27(9):2236-2246.

Ruehlman L, Karoly P. (2023). A pilot test of Internet-delivered brief interactive training sessions for depression: Evaluating dropout, uptake, adherence, and outcome. J Am Coll Health. Oct;71(7):2131-2139. doi: 10.1080/07448481.2021.1961781. Epub 2021 Sep 1. PMID: 34469262.

Ruehlman L, Bindler RJ, Rangel TL, Burley M, Penders RA, Wilson M. (in press). Perspectives of adults with pain regarding online pain self-management resources. Journal of Technology in Behavioral Science.

### **BOOK CHAPTER**

Ruehlman, L. & Wilson M. Enhancing Pain Self-Management via Internet-Based Technology. In P. Karoly & G. Crombez (Eds.) 2018. Motivational Perspectives on Chronic Pain: Theory, Research, and Practice. New York: Oxford University Press.

### **REFEREED PRESENTATIONS (in chronological order)**

Ruehlman, L. Depression and affective meaning for current concerns. Poster presented at Arizona State Psychological Association Convention. Scottsdale, Arizona, October, 1983.

Wolchik, S., Ruehlman, L., Sandler, I., & Braver, S. Social support of children of divorce: Direct and stress-buffering effects. Poster presented at the American Psychological Association Convention, Los Angeles, California, September, 1985.

Ruehlman, L. Predicting academic performance from the structure of school-related personal projects. Poster presented at the Annual Convention of the Western Psychological Association, 1987.

Ruehlman, L. & Wolchik, S. Assessment of social support and hindrance of personal projects. Poster presented at the Annual Convention of the Western Psychological Association, 1987.

Karoly, P. & Ruehlman, L. Trait versus cognitive mediators of problem-solving during painful stimulation. Poster presented at the Annual Convention of the Western Psychological Association, 1987.

Okun, M. A., Ruehlman, L., & Karoly, P. Applying the theory of reasoned action to college student turnover. Poster presented at the annual convention of the American Psychological Association, Boston, Massachusetts, 1990.

Ruehlman, L., Karoly, P., & Lecci, L. Development of the Goal Systems Assessment Battery. Poster presented at the 73rd Annual Convention of the Western and Rocky Mountain Psychological Association, Phoenix, April, 1993.

Ruehlman, L. & Karoly, P. Negative social exchange and psychological distress. Poster presented at the 73rd Annual Convention of the Western and Rocky Mountain Psychological Association, Phoenix, April, 1993.

Lecci, L., Karoly, P., Ruehlman, L., & Lanyon, R. Health goal representation among hypochondriacal adults and its relation to adjustment. Poster presented at the 73rd Annual Convention of the Western and Rocky Mountain Psychological Association, Phoenix, April, 1993.

Ruehlman, L., Karoly, P., Lanyon, R., & Lecci, L. Development of a brief mental health screening instrument. Poster presented at the 73rd Annual Convention of the Western and Rocky Mountain Psychological Associations, Phoenix, April, 1993.

Ruehlman, L., Karoly, P., & Briggs, C. Goal cognition and adjustment to chronic illness. Poster presented at the annual convention of the Society of Behavioral Medicine, San Francisco, 1993.

Ruehlman, L. Development of the Gambling Practices Scale. Paper presented at the 15<sup>th</sup> National Council on Problem Gambling Conference 2001. Seattle, June 22, 2001.

Ruehlman, L., Karoly, P., Newton, C., Aiken, L., Todd, M., & Fairholme, C. Development of the Chronic Pain Screen. Poster presented at the 61st Annual Scientific Meeting of the American Psychosomatic Society, Phoenix, March, 2003.

Karoly, P., Ruehlman, L., & Okun, M. Level of exercise and intentional mindsets. Poster presented at the annual Convention of the Western Psychological Association. Phoenix, April 2004.

Okun, M., Fairholme, C., Karoly, P., Ruehlman, L. Contents and processes associated with students' goals For introductory psychology. Poster presented at the annual Convention of the Western Psychological Association. Phoenix, April , 2004.

Ruehlman, L., Newton, C., & Karoly, P. Chronic pain and compensation. Poster presented at the annual Convention of the Western Psychological Association. Phoenix, April, 2004.

Ruehlman, L. & Karoly, P. Management of exercise goals among irregular, short-term regular, and long-term regular exercisers: The role of planning and goal switching. Poster presented at the annual Convention of the Western Psychological Association. Phoenix, April, 2004.

Ruehlman, L. & Karoly, P. Psychological factors account for pain's interference with exercise: A National Community Sample. Poster presented at the annual Convention of the American Psychological Society, May, 2005.

Ruehlman, L. Psychosocial Correlates of Pain-Related Life Task Interference among Women with Fibromyalgia. Paper presented at the National Fibromyalgia Association Conference, March 2006.

Ruehlman, L. Fitness Motivation in Fibromyalgia: Targets for Change. Paper presented at the National Fibromyalgia Association Conference, March 2006.

Ruehlman, L., Karoly, P., & Enders, C. Evaluation of the online chronic pain management program. Paper presented at the 30<sup>th</sup> Annual Scientific Meeting of the American Pain Society, Austin, Texas, April, 2011.

Mun, C.J., Karoly, P., Ruehlman, L., & Kim, H. Linking Borderline Personality to Pain Via Depression and Catastrophizing. Paper presented at the 26<sup>th</sup> Annual Convention of the Association for Psychological Science, San Francisco, California, May, 2014.

Mun, C. J., Karoly, P., Okun, M., & Ruehlman, L. S. (2015, August) Do Pain Severity and Pain-Induced Fear Mediate the Effect of an Online Chronic Pain Management Program on

Medication Use? Poster presented at the 123<sup>rd</sup> Annual Convention of the American Psychological Association, Toronto, Ontario, Canada.

Karoly, P., Ruehlman, L., Vizcaino, M., Berardy, A., Shilling, K., Lines, S., & Wharton, C. Motivational Factors in Adherence to Plant-Based Eating. Poster presented at the Annual Meeting of the American Public Health Association, San Diego, California, November, 2018.

Bindler RJ, Burley M, Daily G, Ruehlman L, Watson H, Wilson M. Engaging Community Partners to Determine Needs and Preferences of People with Pain. Poster presented at: 2023 Inland Northwest Research Symposium; March 23, 2023; Spokane, WA.

# COMMUNITY WORKSHOPS/PRESENTATIONS

Ruehlman, L. Living with Pain: Restoring Hope through Self-Management. Honeywell International, Glendale, Arizona, May, 2012.

Ruehlman, L. Report on Development of the Building Efficacy for Successful Tapering Program. Cross-Institutional Chronic Pain Research Group, Carl T. Hayden, VA Medical Center. Phoenix, Arizona. March 23, 2018.

Ruehlman, L. Sustainable Eating Workshop. Valley Unitarian Universalist Congregation. Chandler, Arizona. October 20/November 3, 2019.

### COMMUNITY WRITING

- L. Ruehlman, Goalistics Chronic Pain Management Blog. 2010-2016.
- L. Ruehlman, Writer for Pain Pathways Magazine. 2016-2018.