Gregory J. Newman

2606 Hollingbourne Dr.
Fort Collins, Colorado 80526
(970) 267-0834 ~ (970) 988-6289
Gregory.Newman@ColoState.Edu

EDUCATION

Ph.D. Ecological Informatics, Citizen Science, & Community-Based Monitoring — **August, 2010**
Forest, Rangeland, Watershed Stewardship
Colorado State University

M.S. Restoration Ecology / Rangeland Ecosystem Science — **May, 1999**
Colorado State University

B.S. Biological Sciences & Environmental Health — **May, 1995**
Colorado State University

PROFESSIONAL APPOINTMENTS/EMPLOYMENT

Coordinator of Engagement Technology. CSU System. CSU Spur Campus — **2021-present**

Affiliate Faculty. Graduate Degree Program in Ecology (GDPE), CSU

Affiliate Faculty. Human Dimensions of Natural Resources, CSU — **2017-present**

Affiliate Faculty. Department of Ecosystem Science and Sustainability, CSU — **2015-present**

Research Scientist. Natural Resource Ecology Laboratory (NREL), Colorado State University (CSU), Ft. Collins, Colorado — **2010-present**

Director. CitSci.org – Comprehensive Citizen Science Support Platform — **2010-present**

Research Associate. NREL, CSU — **2007-2010**

COURSES TAUGHT

Concepts in GIS (NR505) — **2017-present**

Citizen Science in the Natural Sciences - GDPE Seminar (ECOL592) — **2017-present**

CURRENT PROJECTS

CSSI: Collaborative Research: Framework: Software: HDR: Building the Twenty-First Century Citizen Science Framework to Enable Scientific Discovery Across Disciplines ($945,792) — **2018-present**
Principle Investigator (PI). Sponsor: National Science Foundation (NSF)

SSI-SI2: Advancing and Mobilizing Citizen Science Data through an Integrated Sustainable Cyber-Infrastructure ($1,000,000) — **2016-present**
Principle Investigator (PI). Sponsor: National Science Foundation (NSF)

Stream tracker: Crowd sourcing and remote sensing to monitor stream flow intermittence ($1,299,242) — **2017-present**
Co-PI. Sponsor: NASA

PPSR Supplement to Award #1636848: BD Spokes: SPOKE: SOUTH: Collaborative: Using Big Data for Environmental Sustainability: Big Data + AI Technology = Accessible, Usable, Useful Knowledge ($47,000) **2017-present**
Principle Investigator on subcontract (PI). Sponsor: Smithsonian Institute & NSF

Developing a Pennsylvania volunteer watershed monitoring portal: prototype system development ($14,988) **2015-present**
Principle Investigator (PI). Sponsor: Dickinson College

Bridging Communities and Scales Through A Global Trans-Disciplinary Mountain Sustainability Network ($469,981) **2014-present**
PI on subcontract. Sponsor: NSF

Development of Citizen Science Programs and Materials ($9,996) **2014-present**
Principle Investigator (PI). Sponsor: National Park Service (NPS)

SI2/SSE - Developing Sustainable Software Elements to Support the Growing Field of Public Participation in Scientific Research/Citizen Science ($493,076) **2013-present**
PI. Sponsor: NSF

Sustaining Ecological Communities through Citizen Science and Online Collaboration ($1,217,074) **2013-present**
PI on subcontract. Sponsor: Rutgers University (NSF)

Model System Continuation of Species Distribution Modeling Activities ($190,661) **2013-present**
Collaborator. Sponsor: United State Geological Survey (USGS)

Terrestrial Ecosystem Characterization in the Northern Rockies: Vegetation Phenology, Soil Sampling and Data Analysis for the Wyoming Landscape Conservation Initiative and Other Partners ($50,000) **2013-present**
PI on subcontract. Sponsor: USGS

Developing the Living Atlas of East African Flora ($168,061) **2012-present**
PI. Sponsor: JRS Biodiversity Foundation

PUBLICATIONS

Selected Publications

Lin Hunter, D. E., G. J. Newman, and M. M. Balgopal. 2023. What's in a name? The paradox of citizen science and community science. Frontiers in Ecology and the Environment 21:244-250.

Xoco A. Shinbrot, Kelly W. Jones, **Greg Newman** & Miriam Ramos-Escobedo. 2021. Why citizen scientists volunteer: the influence of motivations, barriers, and perceived project relevancy on volunteer participation and retention from a novel experiment, Journal of Environmental Planning and Management, DOI: 10.1080/09640568.2021.1979944

Liebenberg, L., //Ao, . /Am ., Lombard, M., Shermer, M., Xhukwe, . /Uase ., Biesele, M., //xao, D., Carruthers, P., Kxao, . ≠Oma ., Hansson, S.O., Langwane, H. (Karoha) ., Elbroch, L.M., /Ui, N., Keeping, D., Humphrey, **G., Newman**, G., G/aq'o, . /Ui ., Steventon, J., Kashe, N., Stevenson, R., Benadie, K., du Plessis, P., Minye, J., /Kxunta,

. /Ui ., Ludwig, B., Daqm, . ≠Oma ., Louw, M., Debe, D. and Voysey, M., 2021. Tracking Science: An Alternative for Those Excluded by Citizen Science. Citizen Science: Theory and Practice, 6(1), p.6. DOI: http://doi.org/10.5334/cstp.284

Lin Hunter, D. E., G. J. Newman, and M. M. Balgopal. 2020. Citizen Scientist or Citizen Technician: A Case Study of Communication on One Citizen Science Platform. Citizen Science: Theory and Practice 5:17.

Swift, D., Boone, R., Coughenour, M., & **Newman, G**. (2021). Humans in Ecosystems. In R. Woodmansee, J. Moore, D. Ojima, & L. Richards (Eds.), Natural Resource Management Reimagined: Using the Systems Ecology Paradigm (Ecology, Biodiversity and Conservation, pp. 279-299). Cambridge: Cambridge University Press. doi:10.1017/9781108655354.010

Woodmansee, R., Moore, J., **Newman, G.**, Evangelista, P., & Woodmansee, K. (2021). Environmental Literacy: The Systems Ecology Paradigm. In R. Woodmansee, J. Moore, D. Ojima, & L. Richards (Eds.), Natural Resource Management Reimagined: Using the Systems Ecology Paradigm (Ecology, Biodiversity and Conservation, pp. 335-352). Cambridge: Cambridge University Press. doi:10.1017/9781108655354.012

Newman, G., S. Newman, R. Scarpino, N. Kaplan, and A. Crall. 2020. Data Management and Visualization *In:* Handbook of Citizen Science in Ecology and Conservation. University of California Press. 2020. Christopher A. Lepczyk, Owen D. Boyle, and T. L. V. Vargo (editors).

Nowak, K., J. Berger, A. Panikowski, D. G. Reid, A. L. Jacob, **G. Newman**, N. E. Young, J. P. Beckmann, and S. A. Richards. 2020. Using community photography to investigate phenology: A case study of coat molt in the mountain goat (Oreamnos americanus) with missing data. Ecology and Evolution 10:13488-13499.

Crall, A., D. Mellor, S. Gray, and **G. Newman**. 2020. Collecting High-Quality Data *In:* Handbook of Citizen Science in Ecology and Conservation. University of California Press. 2020. Christopher A. Lepczyk, Owen D. Boyle, and T. L. V. Vargo (editors).

Lynn, S. J., N. Kaplan, S. Newman, R. Scarpino, and G. Newman. 2019. Designing a Platform for Ethical Citizen Science: A Case Study of CitSci.org. Citizen Science: Theory and Practice, 4(1), 14. . Citizen Science: Theory and Practice **4**:14.

Link, G., Lumbard, K., Damen, N., Rosser, H., Germonprez, M., Goggins, S., Wiggins, A., Ahuja, V., Brier, J., Cohoon, J., Halfaker, A., Howison, J., Marti, D., **Newman, G.**, Østerlund, C., Paik, R., Rother, B., &Schecter, A. (2019). Open Community Health: Workshop Report. Journal of Peer Production, 13. http://peerproduction.net/editsuite/issues/issue-13-open/news-from-nowhere/open-community-health-workshop-report/.

Jordan, R., Crall, A., Hmelo-Silver, C.E., Gray, S. A., **Newman, G.**, Sorensen, A. 2018. Developing Model-Building as a Scientific Practice in Collaborative Citizen Science. Natural Sciences Education 47(180013): 1-7.

Newman, G., M. Chandler, M. Clyde, B. McGreavy, M. Haklay, H. Ballard, S. Gray, R. Scarpino, R. Hauptfeld, D. Mellor, and J. Gallo. 2017. Leveraging the power of place in citizen science for effective conservation decision making. Biological Conservation 208:55-64.

Frensley, T., A. Crall, M. Stern, R. Jordan, S. Gray, M. Prysby, **G. Newman**, C. Hmelo-Silver, D.

Mellor, and J. Huang. 2017. Bridging the Benefits of Online and Community Supported Citizen Science: A Case Study on Motivation and Retention with Conservation-Oriented Volunteers. Citizen Science: Theory and Practice 2:1-14.

Chandler, M., L. See, K. Copas, A. M. Z. Bonde, B. C. López, F. Danielsen, J. K. Legind, S. Masinde, A. J. Miller-Rushing, **G. Newman**, A. Rosemartin, and E. Turak. 2016. Contribution of citizen science towards international biodiversity monitoring. Biological Conservation Available online 2 November 2016.

Gray, S., R. Jordan, A. Crall, **G. Newman**, Hmelo-Silver, H. C., J., , W. Novak, D. Mellor, T. Frensley, M. Prysby, and A. Singer. 2016. Combining participatory modelling and citizen science to support volunteer conservation action. Biological Conservation. http://dx.doi.org/10.1016/j.biocon.2016.07.037

Göbel, C., J. L. Cappadonna, **G. Newman**, J. Zhang, and K. Vohland. 2016. Chapter 2 - More Than Just Networking for Citizen Science: Examining Core Roles of Practitioner Organizations. Pages 24-49 in L. Ceccaroni and J. Piera, editors. Analyzing the Role of Citizen Science in Modern Research. IGI Global, Hershey, Pennsylvania.

Ellwood, E.R., Dunckel, B., Flemons, P., Guralnick, R., Nelson, **G. Newman**, S. Newman, S., Paul, D., Riccardi, G., Rios, N., Seltmann, K.C., Mast, A. 2015. Accelerating Digitization of Biodiversity Research Specimens through Online Public Participation. BioScience 65: 383-396. doi:10.1093/biosci/biv005.

Jarnevich, C. S., Simpson, A., Graham, J., **G. Newman**, and Bargeron, C. 2015. Running a network on a shoestring: the Global Invasive Species Information network. Management of Biological Invasions. Volume 6, Issue 2: 137–146. doi: http://dx.doi.org/10.3391/mbi.2015.6.2.04

Newman, G. 2014. Citizen CyberScience – New directions and opportunities for human computation. Human Computation 1:2: 103-109. DOI: 10.15346/hc.v1i2.2.

Mullen, K., **G. Newman**, and J. Thompson. 2013. Facilitating the development and evaluation of a citizen science website: A case study of repeat photography and climate change in southwest Alaska's national parks. Applied Environmental Education and Communication. 12:261–271, DOI:10.1080/1533015X.2013.876302.

Newman, G., A. Wiggins, A. Crall, E. Graham, S. Newman, and K. Crowston. 2012. The Future of Citizen Science: Emerging technologies and shifting paradigms. Frontiers in Ecology and the Environment. 10(6): 298–304, DOI: 10.1890/110294.

Crall, A., M. Renz, B. Panke, **G. Newman**, C. Chapin, J. Graham, and C. Bargeron. 2012. Developing Cost-Effective Early Detection Networks for Regional Invasions. Biological Invasions. 14(12), 2461-2469, DOI: 10.1007/s10530-012-0256-3

Crall, A. W., K. Holfelder, **G. Newman**, J. Graham, and D. M. Waller. 2012. The Impacts of an Invasive Species Citizen Science Training Program on Participant Attitudes, Behavior, and Science Literacy. Public Understanding of Science. 22(6) 745-764. DOI: 0963662511434894.

Newman, G., J. Graham, A. Crall, and M. Laituri. 2011. The art and science of multi-scale citizen science support. Ecological Informatics 6:217-227.

Graham, J., C. Jarnevich, N. Young, **G. Newman**, and T. J. Stohlgren. 2011. How will climate change affect the potential distribution of Eurasian tree sparrows *Passer montanus* in

North America? Current Zoology 57(5):648-654.

Crall, A., **G. Newman**, D. M. Waller, T. J. Stohlgren, K. Holfelder, and J. Graham. 2011. Assessing Citizen Science Data Quality: An Invasive Species Case Study. Conservation Letters 4:433-442.

Wiggins, A., R. D. Stevenson, **G. Newman**, and K. Crowston. 2011. Mechanisms for Data Quality and Validation in Citizen Science. Paper presented at "Computing for Citizen Science" workshop. IEEE eScience Conference. Stockholm, SE, 5 December, 2011.

Newman, G., D. E. Zimmerman, A. Crall, M. Laituri, J. Graham, and L. Stapel. 2010. User friendly web mapping: Lessons from a citizen science website. International Journal of Geographical Information Science 24:1851-1869.

Newman, G. A. Crall, M. Laituri, J. Graham, T. J. Stohlgren, J. C. Moore, K. Kodrich, and K. Holfelder. 2010. Teaching citizen science skills online: Implications for invasive species training programs. Applied Environmental Education and Communication 9:4, 276-286.

Graham, J., **G. Newman**, S. Kumar, C. Jarnevich, N. Young, A. Crall, T. J. Stohlgren, and P. Evangelista. 2010. Bringing Modeling to the Masses: A Web Based System to Predict Potential Species Distributions. Future Internet 2:624-634.

Newman, G. 2010. Designing and evaluating participatory cyber-infrastructure systems for multi-scale citizen science. Ph.D. Dissertation. Colorado State University. 137 pgs.

Crall, A. W., **G. Newman**, C. Jarnevich, T. J. Stohlgren, D. M. Waller, and J. Graham. 2010. Improving and Integrating Data on Invasive Species Collected by Citizen Scientists. Biological Invasions 12:3419-3428.

Graham, J., A. Simpson, A. Crall, C. Jarnevich, **G. Newman**, and T. J. Stohlgren. 2008. Vision of a cyberinfrastructure for nonnative, invasive species management. Bioscience 58:263-268.

Graham, J., **G. Newman**, C. Jarnevich, R. Shory, and T. J. Stohlgren. 2007. A Global Organism Detection and Monitoring System for Non-native Species. Ecological Informatics 2:177-183.

Jarnevich, C., J. Graham, **G. Newman**, A. W. Crall, and T. J. Stohlgren. 2007. Balancing data sharing requirements for analyses with data sensitivity. Biological Invasions 9:597-599.

Crall, A.W., **G. Newman**, T.J. Stohlgren, C.S. Jarnevich, P.H. Evangelista, D. Guenther. 2006. Dominance as a Component of Non-Native Species Invasions. Diversity and Distributions 12:195-204.

Newman, G. and E. F. Redente. 2001. Long-term plant community development as influenced by revegetation techniques. Journal of Range Management 54: 717-724.

Stohlgren, T.J., D. Binkley, G. Chong, M. Kalkhan, L. Schell, K. Bull, Y. Otsuki, **G. Newman**, M. Bashkin, and Y. Son. 1999. Exotic plant species invade hot spots of native plant diversity. Ecological Monographs 69(1) 25-46.

Newman, G. 1999. Long-term revegetation practices in the Piceance Basin, Colorado. M.S. Thesis. Colorado State University. 72 pages.

Selected Presentations

2018 – Rocky Mountain Citizen Science Conference, Cody, Wyoming,
Elevating the Value of Citizen Science. **Keynote Address.**

2017 – Citizen Science Association Conference, St. Paul, Minnesota. (May 17-20, 2017)
Understanding the role of place in citizen science and conservation decision making.

2015 – Citizen Science 2015, San Jose, California, AAAS pre-conference.
CitSci.org: A Citizen Science Support Platform.

2014 – 3rd Annual Citizen CyberScience Summit 2014, London
CitSci.org: Comprehensive Citizen Science Support.

2013 – Ecological Society of America – Annual Meeting 2013, Minneapolis, MN
Participatory Conservation: Developing the Living atlas of East African Flora (LEAF)

2012 – iDigBio – Public Participation in Digitization of Biodiversity Specimens Workshop
Invited Speaker: The power of many: many people, many programs, and a common goal

2012 – Ecological Society of America – PPSR 2012 (Aug 4-5, 2012)
Invited Speaker: Redefining Participation: An enterprise approach to facilitating new PPSR projects while supporting existing efforts

2012 – Society for Conservation Biology – NACCB (July 15-18, 2012)
Invited Speaker: Cyber-infrastructure support for grassroots conservation, citizen science, and community-based monitoring

2011 – Webinar delivered to the Society for Conservation GIS (March 14, 2011)
Invited Speaker: Geodatabase design for invasive species monitoring

2010 – CI Days: Cyberinfrastructure in the Rockies (NSF Workshop), Fort Collins, CO
Invited Panelist: The art and science of multi-scale citizen science support

2010 – USGS Volunteered Geographic Information Workshop, Reston, VA
CitSci.org: Citizen science, participatory GIS, and community-based monitoring

2009 – Center for Collaborative Conservation: Bridging the Gap, Fort Collins, CO
Online data management and training for collaborative conservation

2008 – NREL Seminar, Fort Collins, CO
Scaling Ecology Across Audiences: From citizens to scientists

2008 – Ecological Society of America, Milwaukee, WI
Can citizen scientists think spatially: Evaluating the public's ability to understand and use an online GIS map application for invasive species

2007 – Ecological Society of America, San Jose, CA
Bringing modeling to the masses: Online tools for invasive species management

GRANTS

Pending/Reviewed

2017 $1,032,626 - NSF (4 years) – Pending – **Co-PI**
Increasing the capacity of communities to participate in science through co-created citizen science

2016 $1,013,771- NSF (5 years) – Pending – **Co-PI**
DIP: Guiding Onboarding: **G**uided **O**nboarding of **C**yber **I**nnovation **T**echnologies for **SC**ientific **I**mprovement (GO CITSCI)

Past

2013 – $30,000 – Earthwatch (1 year) – **Principle Investigator (PI)**
Earthwatch Urban Forest Program – Web/Mobile Platform.

2013 – $14,681 – University of Wisconsin, Madison (1 year) – **(PI)**
Developing the Wisconsin First Detector Program.

2013 – $34,000 – USDA APHIS CPHST PPQ (1 year) – **Principle Investigator (PI)**
Advancing and Maintaining ID Source.

2012 –$72,609 - NPS (1.5 years) – **PI**
Place-Based Climate Change Communication using Repeat Photography in Southwest Alaska National Parks

2012 –$14,000 - WCNR CFRI (1 year) – **PI**
CFRI website development: Developing participatory community-based monitoring tools for forest health monitoring

2012 –$34,000 – NPS – University of WI – GLRI (1 year) – **PI**
Developing the Great Lakes Early Detection Network

2012 –$64,000 - USDA APHIS PPQ (6 months) – **PI**
Developing ID Source: A comprehensive database for pest identification aids

2010 – $400,661 - DOI/USGS (5 years) – 6/12/07 - 5/31/2012 – **Senior personnel**
Developing and testing predictive maps and custom models for invasive species

2010 – ~$25,000 - USDA APHIS PPQ (4 months) – **Senior personnel**
Developing ID Source: A comprehensive database for pest identification aids

2010 – $94,660 - DOI/USGS (2 years) – 9/1/2008 - 8/31/2010 – **Senior personnel**
Potential effects of climate change on harmful invasive species distributions in the US

2010 – $94,618 - DOI/USGS (3 years) **–** 6/1/2009 - 4/31/2011 – **Collaborator**
Africanized honey bees: Initial web-site development

2010 – $241,737 - DOI/NBII (4 years) **–** 2/1/2007 - 7/31/2011 – **Senior personnel**
National Biological Information Infrastructure Invasive Species Information Node

2009-2010 – $8,000 - WCNR, CSU (1 year) – **Senior personnel**
K-12 Project-Based Ecological Research: Phenology Observations & Invasive Species Monitoring to Understand Changes in our Local Environment

2007-2010 – $900,000 - NSF (3 years) **– Senior personnel**
CI-TEAM Implementation Project – Using the GODM cyberinfrastructure to involve citizens in invasive species data collection

2003-2006 – $150,000 – NPCA (3 years) – **Senior personnel**
Developing a State of the Parks program to assess the integrity of natural and cultural resources for National Parks nationwide

2001-2002 – $5,000 – NPS (1 year) **– CO-PI**
Conducting a floristic inventory: Little Bighorn Battlefield National Monument, MT

SERVICE

Affiliations

Inaugural Board Chair, Citizen Science Association
Member, Ecological Society of America
Member, Global Invasive Species Information Network
Member, North American Invasive Species Information Network
Restoration Ecologist, Web Developer, Blue Mountain Environmental Consulting

Appointments

Web Communication Committee – Citizen Science Association
Board Member – Citizen Science Association
Board Member, North American Invasive Species Information Network
Web and IT Subcommittee, North American Pika Consortium
Expert Review Committee, Canada Foundation for Innovation (CFI) 2012 Leading Edge and New Initiatives Funds (LEF/NIF) competition

Journal Referee/Peer Review

Human Computation (Guest Editor of special Issue on Citizen Science; December 2014), Applied Environmental Education and Communication, Frontiers in Ecology and the

Environment, Journal of Environmental Management and Assessment, Ecological Informatics, Biological Conservation, Environmental Management, Environmental Systems Research

Graduate Students

Dani Lin Hunter (2018-present), Ph.D., GDPE, Biology, CSU
Rina Hauptfeld (2015-present), PhD, HDNR, GDPE, CSU
Katie Boyd (2016), M.S, GDPE, CSU
Brian Fauver (2013-present), MS, Human Dimensions in Natural Resources (HDNR), CSU
Jenael Falcao (2011-2012), MS, Conservation Leadership Through Learning, HDNR, CSU
Terra Smith (2011-2012), MS, Conservation Leadership Through Learning, HDNR, CSU
Karina Mullen (2011-2012), MS, HDNR, CSU
Jia Ling (2010-2012), MS, Warner College of Natural Resources (WCNR), CSU

OTHER PROFESSIONAL EXPERIENCE

Research Associate. NREL/CSU. Fort Collins, CO	**1999-2010**
Restoration Ecologist Camp, Dresser, & McKee Federal Programs, Inc.	**1999**
Graduate Research Assistant Colorado State University	**1997-1999**
Biological Technician Rocky Mountain National Park, Estes Park, CO	**1994-1997**

REFERENCES

Dr. Tom Stohlgren

Ecologist & Research Scientist
USGS Fort Collins Science Center
Natural Resource Ecology Laboratory, CSU
Fort Collins, CO 80523-1499
(970) 491-1980 | toms@nrel.colostate.edu

Dr. Meena Balgopal

Associate Professor
Biology, CSU
436 Biology Building
Fort Collins, CO 80523
(970) 491-4277

Dr. Jim Graham

Assistant Professor – Environmental Science
Humboldt State University
1 Harpst Street
Arcata, CA95521
(707) 826-3011 | james.graham@humboldt.edu

Dr. Melinda Laituri

Associate Professor
Dept. Ecosystem Sciences and Sustainability, Warner College of Natural Resources, CSU
Fort Collins, CO 80523
(970) 491-0292 | mell@warnercnr.colostate.edu