

Ben Norton

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EDUCATION

Master of Science in Geology

2008, University of Tennessee, Knoxville, TN

Bachelor of Science in Geosciences

2005, University of Arizona, Tucson, AZ

WORK EXPERIENCE

Head, Technology & Collections Manager, Meteorites

07/2015–Current

North Carolina Museum of Natural Sciences

Tasks: Develop technical strategies, solutions, and tools that support institutional priorities and address the operational needs of museum staff; Point-of-contact for cross-section technical collaborations and initiatives; Responsible for planning, development, management, and design of custom-built web applications and websites; UX/UI website and application designer; Administrator for all institutional digital assets and resources; Collections management; Data manager and curator; GIS application developer and map designer; Webmaster; Co-PI on multiple NSF grants.

Accomplishments: Designed and developed more than a dozen websites including a new website for the museum; Developed and designed an array of custom web applications and websites; Lead developer, designer, and project manager for more than a dozen technical initiatives and development projects; Set policies and guidelines for the usage of web-based assets; Established collections data management protocols and institutional workflows for all collections; Published collection datasets to global biological data repositories; Awarded multiple NSF collections grants; Established QA/QC techniques and set data standards for collections data processing and analysis.

Freelance Developer and Information Technology Consultant

2011–2013, 2017–Current

Tasks: Full stack web developer and designer, Database application developer, Technology consultant

Accomplishments: Successfully managed a part-time freelance venture with a personal marketing strategy, contracts, questionnaires, and invoices; Ability to self-manage the development and administration of multiple projects while consistently satisfying client expectations; Deliverables include custom websites and database applications. Clients include Smithsonian Institute (Washington DC), Max Plank Institute (Germany), HOPE Research Institute (Phoenix, AZ), Ecosystem Planning & Restoration (Tomball, TX), Museum of Life and Science (Durham, NC), North Carolina Environmental Restoration Association (Raleigh, NC).

Collections Data Curator

05/2013–07/2015

Research & Collections, North Carolina Museum of Natural Sciences

Tasks: Data manager and curator; GIS application developer and map designer; Database administrator; Webmaster

Accomplishments: Published collection datasets to global biological data repositories; Designed and developed the Online Collections website (<https://collections.naturalsciences.org>) and web mapping applications; Curated biological, paleontological, and geological collections datasets; Developed collections data workflow, a multi-tier system that is the backbone for collections data capture, processing, and publishing; Co-PI on multiple collections grants; Secretary of GIS working group; Created and implemented QA/QC techniques for collections data processing and analysis; Set data standards for collections data publishing.

Programmer/Analyst II

04/2010–05/2012

Global Climate Change and Environmental Sciences Unit, RTI International

Tasks: Developed and maintained software, systems, and websites for environmental research projects; Investigated new software and technologies to business and research needs; Collaborated on technical documentation and support proposal processes.

Accomplishments: Created the user interface and data access layers of a web-based GIS watershed modeling tool and decision-support system, waterFALL (<https://www.waterfall.rti.org>); Built and maintained websites for environmental projects using multiple architectures, DotNetNuke, ColdFusion/MSSQL, and XHTML/CSS; Created and maintained SharePoint workflows; Tested and debugged web and desktop applications; UX/UI designer; Converted mockups to functional websites and web applications; Created QA/QC techniques for data processing and analysis; Contributed to user guides, technical reports, and literature reviews; Applied science background in contributions to technical reports and literature reviews; Applied interdisciplinary background to support a diverse set of environmental research projects including monitoring of water and ground pollution, environmental impact assessments, urban waste management, and hydrologic modeling of watersheds.

Ecological Data and Metadata Scientist

03/2008–04/2010

Environmental Sciences Division, Oak Ridge National Laboratory

Tasks: Database developer and designer, ColdFusion web developer, Scientific data curator

Accomplishments: Balanced a diverse set of responsibilities, data curation, web development, and QA/QC technique development, between coincident projects, the Fluxnet (<https://www.fluxnet.ornl.gov>) and AmeriFlux (<https://public.ornl.gov/ameriflux>) Networks; Metadata and measurement data archivist for global micrometeorology and ecology projects; Modernized multiple frontend and backend of multiple websites and web applications; Improved UX and increased website usability, accessibility compliance, and search engine optimization; Redesigned, upgraded, and normalized existing MSSQL databases; Developed a custom XML schema for data archival; Provided logistical and technical support to scientific dataset publishing activities via a web-based data access system.

Graduate Teaching Assistant

2005–2007

Department of Earth and Planetary Sciences, University of Tennessee

Tasks: Researcher, Laboratory teaching assistant

Accomplishments: Established new image processing technique that led to substantial improvements in accuracy and precision with reductions in the required time for experiment and research expenses; Presented preliminary results at the Lunar and Planetary Science Conference in Houston, TX (March 2007); Taught introductory and advanced level courses; Received Outstanding Teaching Assistant award in 2006; Guest lecturer for Environmental Geology.

Research Assistant

2002–2005

Departments of Geosciences and Chemistry, University of Arizona

Tasks: Project team leader, research assistant, data processor, scientific instrumentation specialist

Accomplishments: Developed semi-automated data processing technique; Wrote technical documentation for instrumentation usage and data processing; Trained students for work with project-specific programs, instrumentation usage, and documentation procedures; Collaborated with the Arizona Mineral Museum (<https://www.uamineralmuseum.org/>) on project specimen acquisition and collections management activities; QA/QC published datasets for entry into the American Mineralogist Crystal Structure Database (<https://rruff.geo.arizona.edu/AMS/amcsd.php>); Conducted analytical experiments to identify phases using X-Ray Powder Diffraction and Raman Spectroscopic methods.

SKILL SECTORS

Information Technology: Backend Development, Frontend Design, DevOps

Data: Modeling, Analysis, Reporting, Curation, Standardization, Database Design and Administration

Visuals: Geographic Information Systems, Data Visualizations, Imaging Analysis

Project Management: Leadership, Cross Communications, Task Management and Delegation, Budget Management, Risk Mitigation, Critical Thinking

SKILL STACKS

- **Web Development:** Laravel MVC Framework, Vue.js, PHP, C# ASP.NET, ASP MVC, RESTful Web Services, Web GIS (ArcGIS API/Services, Leaflet, Google Maps, OGC Services), jQuery, Handlebars, Bootstrap, Three.js, d3.js, CSS3, HTML5, SCSS, Google Analytics, Amazon Web Services, 508 Accessibility and W3C Standards.
- **Coding:** PHP, JavaScript, Python, SQL, VBA, ColdFusion, C#, Bash, HTML, CSS
- **Content Management Systems:** WordPress, Drupal, Custom-built Systems
- **Data:** Darwin Core, Wavefront OBJ/MTL, RESTful/SOAP, JSON/GeoJSON, XML/XSD, Vector/Raster GIS, ETL Processes, QA/QC, Metadata development, Data standards and custom validation
- **Databases:** Microsoft SQL Server, MySQL, Filemaker Pro, PostgreSQL, Microsoft Access
- **Development:** Visual Studio, Eclipse, and Eclipse-based IDEs, PhpStorm, Subversion, Git
- **GIS:** ArcGIS/ArcMap, ArcGIS REST API, ENVI, PostGIS
- **Package Managers:** Node.js, Elixir, Gulp, Bower, Composer
- **Project Tools:** Slack, Jira, Basecamp, Swagger
- **Software:** Specify, Adobe Creative Suite, Inkscape, Blender, Visio, Microsoft Office on Windows, Mac, and Linux Operating Systems

AWARDS AND NOMINATIONS

- Excellence in Research for an M.S. Degree 2007
- Outstanding Graduate Teaching Assistant 2006
- Outstanding Senior Research Award Nomination 2005

VOLUNTEER EXPERIENCE

- Kindergarten–2nd Grade Instructional Assistant and Tutor, *Briarcliff Elementary* 2014–Current
- Visual World iLab, *NC Museum of Natural Sciences* 2011–2012

INSTRUCTIONAL EXPERIENCE

Martial Arts Instructor Assistant, *Vision Martial Arts, Cary, NC*

- All Ages, 2018–2019

Public Education Programs, *North Carolina Museum of Natural Sciences, Raleigh, NC*

- Elementary Age, 2016–Current
- General Public, 2016–Current

Guest Lecturer, *NC Museum of Natural Sciences & Appalachian State University, Boone, NC*

- Star Formation, 2017 & 2018
- Introduction to Astronomy, 2015 & 2016

Guest Lecturer, *University of Tennessee, Knoxville, TN*

- Environmental Geology, 2005–2007

Graduate Teaching Assistant, *University of Tennessee, Knoxville, TN*

- Environmental Geology, 2005–2007
- Mineralogy, 2006
- Introductory to Geology, 2006

Undergraduate Teaching Assistant, *University of Arizona, Tucson, AZ*

- Mineralogy, 2004–2005
- Structural Geology, 2004

PERSONAL WEBSITES

- Portfolio <https://mbnorton.com>
- LinkedIn Profile <https://linkedin.com/in/mbnorton>
- Organizational Page <https://naturalsciences.org/ben>

SELECT PAST AND PRESENT PROJECTS

NCSM Online Collections <https://collections.naturalsciences.org>

01/2019–Current

Project Manager, Designer, Developer, Administrator

Architecture: Laravel, Vue.js, jQuery, MySQL, AWS Cloud Storage

Organization: North Carolina Museum of Natural Sciences

NCERA <https://ncrestoration.org/>

03/2019–Current

Freelance Developer, Designer

Architecture: HTML5, SASS, Node.js

Organization: North Carolina Environmental Restoration Association, Inc.

NC Candid Critters Project Manager <https://candid.naturalsciences.org>

12/2018–Current

Project Manager, Designer, Developer, Administrator

Architecture: Laravel, Vue.js, jQuery, MySQL, AWS Cloud Storage

Organization: North Carolina Museum of Natural Sciences

Wildlife Insights <https://wildlifeinsights.org/>

06/2018–Current

Information Technology Consultant and Technical Liaison

Organizations: North Carolina Museum of Natural Sciences, Conservation International, Smithsonian

Institute, Google

Ecosystem Planning & Restoration <https://www.eprusa.net/>

03/2017–Current

Freelance Developer, Designer

Architecture: WordPress

Organization: Ecosystem Planning & Restoration

NCSM Collections Asset Management System <https://cams.naturalsciences.org>

10/2016–Current

Project Manager, Designer, Developer, Administrator

Architecture: Laravel, Vue.js, jQuery, MySQL, AWS Cloud Storage

Organization: North Carolina Museum of Natural Sciences

NCMNS Volunteer and Intern Management System <https://volunteers.naturalsciences.org>
09/2016–Current
Designer, Developer, Administrator
Architecture: Laravel, jQuery, MySQL, AWS Cloud Storage
Organization: North Carolina Museum of Natural Sciences

NCMNS Facilities Ticket and Work Order System <https://facilities.naturalsciences.org>
07/2016–Current
Designer, Developer, Administrator
Architecture: Laravel, jQuery, MySQL, AWS Cloud Storage
Organization: North Carolina Museum of Natural Sciences

NCMNS External Creature Request System <https://ecr.naturalsciences.org>
6/2016–Current
Project Manager, Designer, Developer, Administrator
Architecture: Laravel, jQuery, MySQL, AWS Cloud Storage
Organization: North Carolina Museum of Natural Sciences

NC Science Museum Grant Program <https://ncmuseumgrant.naturalsciences.org/>
05/2016–Current
Designer, Developer, Administrator
Architecture: Laravel, jQuery, MySQL
Organization: North Carolina Museum of Natural Sciences

CitSciScribe <https://citsciscibe.org/> (retired)
03/2016–07/2019
Designer, Developer
Architecture: ASP.NET MVC, jQuery, MSSQL, AWS Cloud Storage
Organization: North Carolina Museum of Natural Sciences

North Carolina Museum of Natural Sciences <https://naturalsciences.org>
08/2015–Current
Designer, Developer, Administrator, Project Manager
Architecture: PHP, Twig Template Engine, WordPress, jQuery, MySQL
Organization: North Carolina Museum of Natural Sciences

AmeriFlux <https://public.ornl.gov/ameriflux> (retired)
2008–2010
Designer, Developer, Webmaster
Architecture: ColdFusion, MSSQL
Organization: Oak Ridge National Laboratory

Fluxnet <https://fluxnet.ornl.gov/fluxnet/>
2009–2010
Designer, Developer
Architecture: Drupal
Organization: Oak Ridge National Laboratory

Fluxnet <https://fluxnet.ornl.gov/fluxnet/> (legacy)
2008–2009
Designer, Developer
Architecture: ColdFusion, MSSQL

PUBLICATIONS/ABSTRACTS

Norton, Michael B., (2008) Volumetric Proportion Analyses of Carbonaceous Chondrites: Implications for Accretion and Compositional Diversity. *Thesis (M.S.), University of Tennessee.*

Norton, Michael B., McSween Jr., Harry Y., (2007) Quantifying the volumetric abundances of the components of the Murray CM chondrite: A preliminary investigation. *38th Lunar and Planetary Science Conference, LPI Contribution No. 1338, p.1807.*

Dickinson, W. R., Geherls, G., Fox, J., Stair, K., Anderson, C., Ohja, J., Brown, R., **Norton, M. B.**, Riggs, N., Lehman, T., (2007) Sediment dispersal in Triassic fluvial systems of southwest Laurentia: Insights from U–Pb ages of Detrital Zircon grains. *Geological Society of America Abstracts with Programs, Vol. 39, No. 6, p. 235.*

Brown, Richard A., **Norton, Michael B.**, (2005) Detrital Zircons in the Gartra Member of the Chinle Formation in northern Utah: Implications for upper Triassic paleodrainage patterns. *Geological Society of America Abstracts with Programs, Vol. 37, No. 4, p. 46.*

PUBLISHED DATASETS

Gatens L, **Norton B** (2018): NCSM Mammals Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. http://ipt.vertnet.org/ipt/resource?r=ncsm_mammals

Weaver P, Kammerer C, **Norton B** (2018): NCSM Paleobotany Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. http://ipt.vertnet.org/ipt/resource?r=ncsm_paleobotany

Weaver P, Kammerer C, **Norton B** (2018): NCSM Vertebrate Paleontology Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. http://ipt.vertnet.org/ipt/resource?r=ncsm_vertpaleo

Smith J, Bogan A, **Norton B** (2017): NCSM Mollusk Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. <http://ipt.vertnet.org/ipt/resource?r=ncsm-unio>

Williams, B, McCuller, M, **Norton B** (2017): NCSM Non–molluscan Invertebrates Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. http://ipt.vertnet.org/ipt/resource?r=ncsm_nmi

Gerwin J, O'Shea B, **Norton B** (2014): NCSM Ornithology Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. http://ipt.vertnet.org/ipt/resource?r=ncsm_birds

Hogue G, Dornburg A, **Norton B** (2014): NCSM Ichthyology Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. http://ipt.vertnet.org/ipt/resource?r=ncsm_fishes

Stuart B, Beane J, **Norton B** (2014): NCSM Herpetology Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. http://ipt.vertnet.org/ipt/resource?r=ncsm_herps

Weaver P, **Norton B** (2014): NCSM Invertebrate Paleontology Collection. North Carolina State Museum of Natural Sciences. Dataset/Occurrence. http://ipt.vertnet.org/ipt/resource?r=ncsm_invertpaleo