

Andrew McCarty, Ph.D., M.Eng., PMP
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SUMMARY:

Dr. Andrew McCarty serves as a *Senior Project Manager and Specialist* within the School of Public Health at the University of Maryland, College Park where he manages large and complex projects, oversees the enterprise data infrastructure, provides leadership, and drives innovation.



Dr. Andrew McCarty

Provides oversight for critical business systems, servers, networking, databases, security, web, and cloud resources. Manages organizational compliance with laws, regulations, standards, and directives.

Creates, designs, and teaches engaging educational workshops, seminars, and trainings on a variety of subjects for diverse audiences. Establishes practices for gathering and analyzing data. Develops data collection instruments and methodologies.

Dr. McCarty's background includes experience in a number of different industry sectors including government, private sector, non-profit, technology, healthcare, construction, energy, consulting, and national defense.

Previous experience includes serving in a variety of roles including senior management, technology, education, research, consulting, engineering, and business positions.

Dr. McCarty holds both a Ph.D. and master's degree in Civil Engineering with academic concentrations in Project Management, and a bachelor's degree in Physics. His educational studies emphasize the fields of engineering, mathematics, science, technology, business, and management.

Dr. McCarty's professional, research, and education backgrounds focus on:

- Civil Engineering
 - Project Management
 - Mathematics
 - Data Analytics
 - Physics
 - Leadership
 - Business Administration
 - Healthcare Data & Policy
 - Information Technology
 - Infrastructure Projects
 - Measurement & Evaluation
 - Education & Teaching
 - Modeling & Simulation
 - Construction Projects
 - Program & Portfolio Mgmt.
 - Statistics & Big Data
 - Strategic Management
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EDUCATION:

Ph.D., Civil Engineering 2012
Academic Concentration: Project Management
Department of Civil & Environmental Engineering
University of Maryland, College Park
College Park, MD 20742, USA

*Primary Focus Areas: Information Systems, Education and Learning, Mathematics,
Quantitative Analytics, Statistics, Data Modeling

GPA: 4.0 / Recognized for graduating in top 15% of all university doctoral graduates.

Masters of Engineering (M.Eng.), Civil Engineering 2008
Academic Concentration: Project Management
Department of Civil & Environmental Engineering
University of Maryland, College Park
College Park, MD 20742, USA
GPA: 3.7

B.A. Physics 2006
Department of Physics
Saint Mary's College of Maryland
St. Mary's City, MD 20686, USA

PROFESSIONAL EXPERIENCE:

Senior Project Manager and Specialist **Oct. 2010 – Present**
School of Public Health | University of Maryland, College Park (UMCP)
College Park, MD 20742, USA

- Dr. Andrew McCarty serves as Senior Project Manager and Specialist at the flagship University of Maryland, College Park within the School of Public Health.
- Responsible for managing major projects and strategic initiatives to accomplish the organization's objectives and mission. Oversees all project business, technology, research, and security requirements. Directs large, complex, and special projects.
- Oversees computer hardware, software, servers, networking, security, cloud resources, virtualization, mobile/tablet computing, databases, and enterprise systems. Provides leadership for cutting-edge technology design, deployment, and enhancement projects.
- Oversees systems throughout lifecycles. Directs requirements analyses, system design, deployment, migrations, upgrades, and decommissioning of systems.
- Manages, maintains, and leads enhancements to the school's critical data infrastructure across the entire college.
- Plans and manages multiple projects simultaneously, with attention to detail, timelines, and the larger school-wide and university-wide context of decisions. Responsible for ensuring rigorous quality control throughout project lifecycles.
- Successfully manages diverse stakeholders and project teams.

- Designs, develops, and teaches seminars, classes, workshops, and trainings. Sessions are taught in traditional classroom settings, informal workshop sessions, and via asynchronous web-based recordings.
- Employs the latest software tools for data collection and analysis including SAS, SPSS, STATA, SQL Server, R, Matlab, NVivo, Mathematica, Oracle Database, MS Access, ATLAS.ti, ArcGIS, MySQL and many others.
- Manages organizational compliance with laws, regulations, standards, and directives including HIPAA, FERPA, FISMA, and ITAR/EAR export control requirements.
- Oversees organizational server infrastructure including application servers, web servers, database servers, file servers, Windows Active Directory, Linux, Microsoft SharePoint, and Isolon environments.
- Continuously pushes to improve, grow, and expand what is possible. Responsible for the successful implementation of many new technologies.
- Establishes best practices for gathering, evaluating, and analyzing data. Creates, designs, and administers data collection instruments and methodologies.
- Maintains outstanding relationships with stakeholders. Utilizes creativity, collaboration, and thoughtfulness to approach problem-solving with many different perspectives.
- Prepares and delivers engaging, informative reports and presentations to audiences of diverse stakeholders.
- Provides strategic organizational direction by serving on leadership committees, managing enterprise-wide policies, and helping chart the future course of action.
- Provides consultancy for technology infrastructure development initiatives.
- Dr. McCarty has served on myriad committees related to the use of technology in teaching, research, and learning. He has served as a mentor for many colleagues.
- Oversees hiring and training of new personnel. Manages professional development and growth of staff.

Management Consultant
 KM Management Group
 Arlington, VA 22202, USA

Jul. 2009 – Oct. 2010

- Consultant in industry-leading project/program management consulting company. Dr. McCarty has worked with clients including: The Federal Aviation Administration (FAA), U.S. Coast Guard, National Oceanographic and Atmospheric Administration (NOAA), Department of Defense (DOD), and large private sector clients.
- Collaborated extensively onsite with executives, managers, and team members to successfully design and implement project management systems that utilize Earned Value Management (EVM) to provide superior insight into project performance. Projects ranged in value from \$3M to +\$400M.
- Worked to define business processes, workflow policies, and reporting requirements.
- Responsible for performing organizational requirements analysis and system architecture design.
- Served as auditor on regulatory/procedure compliance audit teams. Worked with governance committees and regulators to assess compliance with laws, standards, and other requirements.
- Developed and taught multi-day seminars on EVM project management, performance metrics, reporting, resource management, and EVM compliance requirements for large government projects. Created course syllabi, learning objectives, and educational materials.

- Responsible for design, configuration, and management of physical and virtual server environments.
- Installed and configured Microsoft SharePoint to host web-based aspects of systems. Created custom webpages for each stakeholder role. Generated custom reports using VBA, HTML, and Java-based programming.
- Performed quality testing of installed systems. Prepared detailed written documentation for each client.
- Conducted hiring and training of new personnel.

Senior Technology and Project Management Consultant **Jan. 2009 – Jun. 2009**
 U.S. Nuclear Regulatory Commission / XA Systems Consulting Group
 Rockville, MD 20852, USA

- Senior Consultant in the Department of License Renewal Program Management Office. Worked with executives, project managers, and engineers to successfully implement Microsoft Project Server for the re-licensing of operating domestic nuclear power plants.
- Worked closely with the client to perform organizational requirements analysis to determine which features of Microsoft Project Server, Microsoft Project Professional, and Microsoft Project Web Access to implement.
- Created, administered, and analyzed data collection instruments for requirements analysis. Established standard practices for collecting and assessing data.
- Defined reporting requirements, and helped the client determine which project aspects to manage using SharePoint (i.e. risk and issue tracking, shared project documents, etc.).
- Guided the client in defining the rights of each user group and the flow of data between users. Mapped workflows using Microsoft Visio.
- Developed and taught classes for executives, project managers, and engineers. Established course learning objectives. Created syllabi and designed educational materials. Course topics included project monitoring and controlling, stakeholder management, communications management, scope management, project closing, project integration management, and Critical Path Management (CPM) scheduling theory.
- Managed formal deployment documentation deliverables which enabled the same server configuration to be rapidly deployed in other organizational areas with minimal time and cost.
- Managed virtual, development, and production server environments.

Project Management and Scheduling Subject Matter Expert **Jan. 2008 – Dec. 2008**
Scholarly Graduate Assistantship Appointment
 National Foreign Language Center
 College Park, MD 20742, USA

- Worked as a Project Management and Scheduling Subject Matter Expert through a graduate assistantship appointment with the National Foreign Language Center.
- Responsible for strengthening project management competencies throughout the organization and empowering project managers to better plan and manage software development projects.
- Implemented a formal organization-wide approach to project management, standard PM business processes, and an enterprise PM software toolset.
- Developed and implemented standard project scheduling and schedule-update processes.

- Performed organizational requirements analysis to design scheduling solution. Designed and deployed an organization-wide project management system built on Microsoft Project.
- Created resource-loaded individual project schedules and an organizational Integrated Master Schedule (IMS).
- Implemented statistical modeling using Monte Carlo analysis principals to allow PM's to perform "what if" analysis examining how delays would affect project milestones or other project schedules.
- Developed and taught a variety of seminar courses for diverse stakeholder audiences. Topics included risk management, planning and executing projects, time management, quality management, and fundamentals of project management. Established learning objectives, created syllabi, and developed educational materials for each course.
- Conducted one-on-one mentoring engagements with project managers to develop project Work Breakdown Structures (WBS) and schedule networks, optimize schedules, and strategize to mitigate against upcoming resource constraints and inter-project dependencies.
- Served as compliance auditor on audit teams.

Technology Consultant

Sept. 2007 – Jan. 2008

Palm Technologies LLC

Frederick, MD 21770, USA

- Served as a Technology Consultant, engaged to provide technical expertise for a special project to upgrade critical corporate accounting and business systems.
- Worked to define business processes, workflow policies, and reporting requirements.
- Responsible for organizational requirements analysis and system architecture design.
- Performed planning, system deployment, and workflow/process optimization.
- Designed and deployed computerized tools to automatically pull together and analyze large data sets from many different data sources.
- Oversees the underlying technology infrastructure necessary for the upgrade including servers, software applications, networking, database tools, web-based technologies.
- Monitored project execution to ensure that all objectives were accomplished including minimizing downtime, completion of system implementation/data migration before the new year, and avoiding removing resources from revenue-generating tasks.
- Maintained formal project risk management plan and risk documentation. Responsible for preparing reports and delivering briefings on project risks throughout project lifecycle.
- Provided extensive planning and logistics support since transition to new system had to be seamless to avoid significant disruptions to business.
- Taught classes on transitioning to the new system. Created learning objectives and designed course materials.
- Technology upgrade was successful with all objectives accomplished. New system migration completed successfully on-time, on-budget, and with minimal downtime. Stakeholders highly satisfied with project outcomes.

Project Scheduling Engineer / Estimator**Aug. 2006 – Sept. 2007**

Facchina Construction Company

La Plata, MD 20646, USA

- Member of high-performance commercial construction and heavy/highway project estimating teams. Responsible for developing detailed project schedules, cost estimating models, resource requirements, and project budgets for bidding purposes. Prepared bids for submission.
- Developed detailed schedules and quantitative cost projection models for large, complex construction projects. Resource-loaded project schedules with labor, material, and equipment to calculate resource requirements and develop time-phased budget projection models.
- Used financial engineering concepts to develop models that incorporate a variety of variables based on statistical analysis of large quantities of real-world data.
- Clients included many Federal and State government agencies, educational institutions, and private entities. Projects included a variety of different buildings, new highways and bridges, and rehabilitation of existing roadways. Projects ranged in value from \$5M to +\$100M.
- Used mathematical methodologies to model direct costs based on labor rates, historical efficiency rates, material quantities, vendor and subcontractor costs, and surety prices. Indirect costs and management reserve were included in project burden rates, which were modeled as a function of project duration and direct costs.
- Developed financial models of project costs to model the impact of changes in the banking or financing industries, construction material markets, local labor rates, equipment costs, unforeseen delays, and other conditions.
- Responsible for ensuring rigorous quality control throughout project lifecycles.
- Served as a compliance officer on assessment review projects.
- Prepared detailed reports on quantitative models, data analysis, resource requirement estimates, and budget forecasts. Presented results to a variety of diverse audiences and stakeholders.

Chair Scholar Intern for Collaborative Research**Aug. 2005 – May 2006**

PAX River Naval Air Systems Command / Saint Mary's College of Maryland

Patuxent River, MD 20670, USA

- Collaborated with physics faculty and U.S. Navy researchers to model, design, and construct an atomic super-cooling apparatus using lasers and electromagnetic fields to restrict atomic motion and cool atoms to within .0001°C of Absolute Zero (-273°C).
- Developed advanced mathematical models to simulate super-cooling conditions. Assessed model assumptions, accuracy of model predictions, and ensured soundness of data models.
- Implemented computerized tools to synthesize data from multiple sources in real-time.
- Used mathematical models to construct an improved laser assembly, which significantly enhanced the performance and stability of the super-cooling apparatus and enabled much finer control of cooling conditions.
- Prepared detailed reports and delivered presentations on data models, methodologies, and results to diverse audiences.
- Taught math and physics to upperclassman science majors. Teaching responsibilities focused on calculus, linear algebra, electricity/magnetism, and atomic physics.

RESEARCH HIGHLIGHTS:

- Dr. McCarty's research background focuses on adult training and workplace learning, project management, technology systems, education, quantitative analysis and modeling, software tools, mathematics, enhanced business performance, and organizational success.
- Extensive experience designing, creating, administering, and analyzing surveys and other data collection instruments for research. Provides leadership throughout efforts to collect, organize, analyze and report on data related to research outcomes and broader trends.
- Leads all aspects of quantitative and qualitative research, including conducting literature reviews, designing studies and developing research instruments, collecting and managing data, analyzing large data sets, and communicating research results.
- End-to-end quantitative modeling experience: designing, building, and implementing quantitative models.
- Employs the latest information systems and software tools to analyze data. Software utilized includes IBM SPSS, SAS, Mathematica, STATA, R, NVivo, ATLAS.ti, Matlab, and other applications.
- Designs, creates, and oversees underlying infrastructure necessary to support research, including servers, software applications, high-speed networking, virtualization, web-technologies, and database tools such as Microsoft SQL Server, Oracle Database, Microsoft Access, and MySQL.
- Manages entire quantitative modeling lifecycle including data collection, statistical analysis, model development, validation, back testing, implementation, and audits after implementation. Preparing detailed documentation and reports throughout process.
- Directs data modeling and analysis efforts using a variety of techniques, including linear and logistic regression, t-tests, chi-square tests, ANOVA analysis, multivariate data techniques, diagnostic procedures, factor analysis, and multi-level modeling, inferential statistical analysis, data mining, and advanced hypothesis testing using statistical analytics tools.
- Utilizes advanced statistical techniques including multiple regression analysis, confirmatory factor analysis, logistic regression analysis, structural equation modeling, and multilevel modeling with clustered data.
- Conducts large-scale community and population-based research focused on practices within markets, industries, and the public, private and non-profit sectors. Research has generated statistically powerful, compelling findings and unprecedented insight.
- Founded [UMD Industry Partners program](#) in the UMD A. James Clark School of Engineering to foster research and collaboration between industry and academia. Partnerships have yielded strong research participation and large quantities of high-quality data.
- Recognized for completing Ph.D. in top academic 15% of all university doctoral recipients.
- Dr. McCarty's doctoral dissertation is available for free download through the UMD library website and can be accessed and cited using the following URL identifier:
<http://drum.lib.umd.edu/handle/1903/13509>

CURRENT LEADERSHIP POSITIONS

- Officer on the board of the Baltimore-Washington D.C. chapter of the Microsoft Project User Group (MPUG), 2008 – Present.
- Dr. McCarty manages the UMD SPH Office of Information Technology. This office is responsible for managing technology and data across the entire school, including six unique departments and offsite locations domestically and internationally, 2010 – Present.
- Member of steering committee responsible for driving continuous technology innovation within the organization and providing strategic guidance, oversight, and stewardship for the School's technology; SPH Innovation Technology Council (ITAC), 2012 – Present.
- Serves on the UMD Academic IT Directors (AITD) council, consisting of the IT director from each school/college in the University. 2012 - Present.
- Member of leadership team responsible for operations, administration, special initiatives, and successful realization of organizational unit's goals and mission. 2012 - Present.
- Director of Technology and founding partner of the UMD SPH Collaborative Learning Studio project, a cutting-edge center-of-excellence for developing transformative educational practices and providing innovative leadership in teaching and learning, 2013 – Present.
- Member of steering committee responsible for campus-wide IT security policies, encryption requirements for sensitive data, and roll out of multi-factor authentication (MFA) for transactions using state resources, 2014 – Present.
- Member of UMD Institutional Risk Assessment Committee (UMDRA) responsible for evaluating and mitigating enterprise-wide exposure to IT and security related risks. 2015 – Present.

PROFESSIONAL ACCREDITATIONS

- PMP certified by the Project Management Institute (PMI), 2008 – Present.

PROFESSIONAL ORGANIZATION MEMBERSHIP:

- American Society for Training and Development (ASTD)
- Deltek wInsight User Group
- eConstruction Group at the University of Maryland, College Park
- Institute for Sustainable Infrastructure (ISI)
- Microsoft Project User Group (MPUG)
- Oracle-Primavera User Group (O-PUG)
- Oracle Primavera Special Interest Group (OPSIG)
- Pharmaceutical Industry SAS Users Group (PharmaSUG)
- Project Management Center for Excellence at the University of Maryland, College Park
- Project Management Institute (PMI)
- SAS Health/Life Sciences, Financial Services, Statistics, and Training industry groups.
- SouthEast SAS Users Group (SESUG)
- Society for Industrial and Applied Mathematics (SIAM)
- Washington D.C. Chapter of the Project Management Institute

SELECTED PUBLICATIONS

- McCarty, A., Skibniewski, M. (2017) [“Patterns of Benefit Realization in PMIS Training: The Impact of Training in the Implementation of Project Management Information Systems.”](#) Journal of Engineering, Project, and Production Management, Vol. 7, No. 1, pages 2–13, ISSN 2221-6529.
- McCarty, A., Skibniewski, M. (2015) [“Understanding the Value of Training in the Professional Workplace: A Literature Review.”](#) International Journal of Continuing Engineering Education and Life-Long Learning, Vol. 25, No. 3, pages 347–358, ISSN 1560-4624.
- McCarty, A. (2014) [“Toward a Framework for Project Management Information System Training: Second Edition.”](#) PM World Journal, Vol. 3, Issue 9, ISSN 2330-4480.
- McCarty, A., Skibniewski, M. (2014) “Toward a Framework for Project Management Information System Training.” [2014 PMI / UMD Project Management Symposium](#). College Park, Maryland. ISSN 2374-9377. [Presentation of framework’s theoretical constructs](#).
- McCarty, A. (2013) “SharePoint 2010 for Project Management”. PM World Today. Review. ISSN 1492-5354.
- McCarty, A. (2012) [“Measuring the Impact of Training in the Implementation of Project Management Information Systems.”](#) Doctoral dissertation, 262 pages, University of Maryland, College Park; Department of Civil and Environmental Engineering. <http://drum.lib.umd.edu/handle/1903/13509>
- Rooke, S., McCarty, A., & Fuhr, P. (2012) "Trustworthy Wireless Sensor Networks (WSNS) for a Systems Approach to Hydro-Fracking Projects." IEEE SysCon International Systems Conference. Vancouver, Canada.

CONFERENCES, SYMPOSIUMS, SEMINARS, WORKSHOPS, TRAININGS, AND PARTICIPATION IN SCHOLARLY ACADEMIC INITIATIVES

- 2017 Maryland Public Health Association (MDPHA) Annual Conference. A premier symposium for public health professionals from throughout Maryland to convene, learn, network, collaborate, and innovate. College Park, MD. Oct. 2017.
- Risk Management Workshop Series. Intensive sessions on strategies to effectively control risk, enhance risk management practices and build organizational competencies. Hosted by the UMD Office of Risk Management. College Park, MD. Winter, 2017.
- Conflict of Interest Training. Managing issues created when research and other interests interact. Offices of the Provost and VP of Research at UMD. College Park, MD. Fall, 2016.

- HIPAA and Healthcare Data Protection Training for Administrators: Collaborative Institutional Training Initiative (CITI) course on healthcare data, privacy, protection of patient information, laws, security protocols, and HIPAA compliance. Spring, 2016.
- Data Analytics Summit: Big Data Analytics, hosted by the Harrisburg University of Science and Technology. Harrisburg, PA. Dec. 2015.
- Advanced Statistical Methods and SAS Programming (EPIB698). Graduate biostatistics course on health data analytics, SAS, and data visualization. UMD Department of Epidemiology and Biostatistics, College Park, MD. Summer, 2015.
- Secure Computing Training Series: Safeguarding Sensitive Systems and Data. Workshop series for public health faculty, staff, and researchers developed and delivered by Andrew McCarty. College Park, Baltimore, and Shady Grove, MD. Spring-Summer, 2015.
- Annual PMI Project Management Symposium. Authored and presented paper on evaluating PM software toolset training outcomes. Silver Spring, MD. Jun. 2014.
- Innovations in Teaching and Learning (ITL) Conference, hosted by the Center for Teaching Excellence. College Park, MD. Apr. 2014.
- Virtualization, Cloud Services, and Hosted Services for the Large Enterprise, workshop by ByteGrid data farm company, Silver Spring, MD. Oct. 2014.
- High Performance Computers (HPC) for Massive Multi-Core Processing. One week seminar offered by the Department of Computer & Space Sciences. College Park, MD. Jul. 2013.
- The Impact of Training in the Implementation of Project Management Information Systems, Invited presentation on research by Andrew McCarty to the Project Management Center for Excellence, College Park, MD. Sept. 2012.
- Windows Server Administrators Workshop, Division of Information Technology, University of Maryland. College Park, MD. Jul. 2012.
- The Value of Training in the Implementation of Enterprise Project Management Systems, Invited lecture by Andrew McCarty to the eConstruction research group within the Department of Civil & Environmental Engineering, College Park, MD. Sept. 2011.
- 2010 Conference on Integrated Program Management (IPM), PMI College of Performance Management. Bethesda, MD. Nov. 2010.
- Program Management and Compliance Using Earned Value, Training by KM Management Group, delivered by Andrew McCarty, Federal Aviation Administration (FAA), Washington D.C., Mar. 2010.
- Deltek Insight Global Technology Conference for Government and Business. National Harbor, MD. May 2010.

- Fostering Compliance with Government Earned Value Management (EVM) Requirements using PM Software Toolsets, Deltek Training. Tysons Corner, VA. Aug. 2009.
- Enterprise Portfolio Management Theory and Strategies for Toolset Deployment, Training developed and delivered by Andrew McCarty on behalf of KM Management Group at the U.S. Coast Guard Base Elizabeth City North Carolina. May 2009.
- Measuring the Value of Training in the Implementation of Enterprise Project Management Systems, Invited lecture by Andrew McCarty to an engineering management research consortium, College Park, MD. Dec. 2010.
- Compliance Training with New Requirements for Earned Value Management (EVM) and the ANSI/EIA-748 Standard, KM Management Group training delivered by Andrew McCarty, National Oceanic and Atmospheric Administration (NOAA), Silver Spring, MD. Sept. 2009.
- Implementing Earned Schedule (ES) Theory and Principles in Project Management Practices, training by XA Systems consulting group, delivered by Andrew McCarty at the U.S. Nuclear Regulatory Commission, Rockville, MD. Feb. 2009.
- Enterprise Project Management Using Microsoft Project, Training delivered to the National Foreign Language Center by Andrew McCarty. Adelphi, MD. Nov. 2008.
- Using PM Software Tools to Improve Project Planning and Reporting, Training delivered at the National Foreign Language Center by Andrew McCarty. Riverdale, MD. Jun. 2008.
- Accelerated Estimating using Building Information Modeling (BIM) Technologies. Facchina Construction Co., Digitax Training Services. La Plata, MD. Feb. 2007.
- Temperature Measurements of Cooled Trapped Rubidium Atoms, lecture by Andrew McCarty on the results of collaborative research conducted by *PAX River Naval Air Systems Command* and the *SMCM Physics Department*. Patuxent River, MD. Apr. 2006.

ADDITIONAL RESOURCES

- Dr. McCarty's profile on the UMD School of Public Health website: <http://sph.umd.edu/people/andrew-mccarty>
- Visit Dr. McCarty on LinkedIn: www.linkedin.com/in/drandrewmccarty
- UMD Industry Partners program founded by Andrew McCarty in the UMD A. James Clark School of Engineering to promote industry/academia relationships, collaboration, and research: <https://pm.umd.edu/about/partners/#industry>
- Andrew's doctoral dissertation is available for free download from the UMD libraries website: <http://drum.lib.umd.edu/handle/1903/13509>