

Curriculum Vitae

John E. Bean, M.S., P.E., G.I.S.P.

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Summary of Experience and Credentials

- 30 years of experience teaching surveying, GIS, and civil engineering at the college level
- Seven years of industrial experience in civil engineering
- Six years of industrial experience in field surveying
- Extensive control surveying and GIS experience on projects
- Licensed Professional Engineer
- Have passed NCEES FS and PS Exams; presently applying for licensure as a Professional Surveyor
- Certified Geographic Information Systems Professional (GISP)
- Director, NSPS Foundation, 2019-Present
- Director, American Association for Geodetic Surveying (AAGS), 2018-2021
- Former President of GLIS, ASPRS Alaska, Alaska Surveying and Mapping Conference
- Dozens of workshop courses taught at the state, regional and national levels
- Extensive ESRI ArcGIS experience
- QGIS experience
- OPUS Projects experience
- AutoCAD Civil 3D and AutoCAD Carlson Civil Software Experience
- Leica GeoOffice and Trimble Pathfinder Office experience
- Programming Languages: FORTRAN, Python, Excel VBA, VB.Net, JavaScript, Perl, SQL
- Ansys, Abaqus, STAAD, and Nastran finite element analysis experience

Formal Education

- M.S. Surveying Engineering Technology, University of Maine – Currently Enrolled
- Graduate Certificate in Surveying Engineering, University of Maine
- M.S. Civil Engineering, Structural Emphasis, University of Connecticut
- B.S. Civil Engineering, Summa Cum Laude, University of New Hampshire

Professional Registration and Certifications

- Licensed Professional Engineer, No. 6531, State of Maine
- GIS Professional (GISP)
- Working toward Surveying Licensure. Have passed NSEE FS and PS examinations
- FAA Level 3 Trained for Aeronautical Surveys
- Authorized ESRI ArcGIS Instructor 1996-2004

Teaching Positions Held:

- *Visiting Professor of Practice* – CEGE, Michigan Technological University, August 2023 - Present
- *Math and Physics Teacher* – Pittsburg High School, Pittsburg, NH, November 2019 – June 2020
- *Assistant Professor, Associate Professor & Department Chair* – Geomatics – University of Alaska Anchorage, Anchorage, AK, August 2009 to May 2013, Chair, June 2011 to May 2012, Assistant, August 2015 to August 2019
- *Adjunct Professor & Teaching Assistant* – Civil Engineering – Clarkson University, Potsdam, NY, January 2004 to July 2009
- *Associate Professor* – Surveying Technology – Paul Smith's College, Paul Smiths, NY August 2002 to June 2009
- *Department Chair and Assistant Professor* – Civil Engineering Technology – CCSU, New Britain, CT, May 2001 to August 2002
- *Assistant Professor* – Civil Engineering Technology – CCSU, New Britain, CT January 1991 to May 2001
- *Full-Time Lecturer* – Civil Engineering - University of Connecticut, Storrs, CT January 1990 to December 1990
- *Adjunct Professor* – Civil Technology/ Surveying - Thames Valley State Technical College, Norwich, CT, December 1988 to May 1990
- *Adjunct Professor* - University of New Haven, New Haven, CT January 1989 to April 1989
- *Instructor - BASIC Programming* - Norwich Adult Education Program, Norwich, CT January 1985 to December 1985
- *Instructor - BASIC Programming* - Concord Adult Education Program, Concord, NH January 1983 to June 1983

Courses Taught

- *UAA:* Surveying Fundamentals, Advanced Surveying, Mapping Basics, Surveying Computations I & II, Geomatics Computer Fundamentals, CAD for Surveyors, Engineering Surveying, Geopositioning, Senior Capstone Project, Engineering Project Management, Introduction to Engineering, Design and Management of Spatial Data, GPS for GIS, Python Programming for ArcGIS
- *Clarkson:* Introduction to Engineering with MATLAB, Strength of Materials
- *PSC:* Introduction to Surveying, Route Surveying, Geodesy, GPS and GIS, Summer Surveying Field Class, Surveying for Forest Technologists, CAD for Surveyors, Introduction to GIS, Advanced GIS, Applications of GIS, The Art of Being Human
- *CCSU:* Statics, Strength of Materials, Structural Analysis, Senior Capstone Project, Introduction to Surveying, Advanced Surveying, GPS Mapping for GIS, Introduction to Computer Applications, Construction Estimating, Construction Surveying, Construction Contracts
- *High School:* Applied Algebra, Algebra I, Algebra II, Geometry, Pre-Calculus, Physics
- *Miscellaneous Adjunct Teaching:* Basic Programming, Surveying, Advanced Surveying, Strength of Materials

Student Club Advisor

- *University of Alaska Anchorage,* Geomatics Student Association, 2009-2019
- *Paul Smith's College,* Student Surveying Club, 2002-2009

- *Central Connecticut State University*, ASCE Student Club, 1991-2002

Publications and Presentations

- Bean, J. & Hollingsworth, J. P., *From A Distance: Offering Introductory Surveying Classes Online at UAA*, UESI/ASCE Geomatics and Surveying Conference, April 2018
- Bean, J. & Hendricks, M., *GIS Train Wrecks*, Presented at the Alaska Surveying and Mapping Conference, Anchorage, AK, February 2016
- Bean, J., *Understanding and Effectively Using the Mat-Su Borough LiDAR Data*, Alaska Society of Professional Land Surveyors, Wasilla, AK, October 2013
- Bean, J., Worthington, K., Hickey, D., *Use of Ground-Based LIDAR to Map Archeological Sites*, Alaska Anthropological Association, Fairbanks, AK, March 2011
- Bean J., *Use of GIS to Help Surveyors Index Records*, Empire State Surveyor, January 2009.
- Bean J., Dempsey, J.P., et. al., *Adding A Hands-On Laboratory Experience to The Freshman Engineering Programming Class at Clarkson University*, 2006 ASEE Annual Conference & Exposition, Chicago, IL, June 2006
- Bean J., *Using GIS With Boundary Survey Data to Obtain Preliminary Project Approval In The Adirondack Park of New York State*, 2005 ACSM Annual Conference, March 2005
- Bean, J. E., *Incorporating GIS into the Surveying Program at Paul Smith's College*, Presented at the ERSI Surveying Summit, San Diego, CA, July 2004
- Bean, J. E., *Using Mapping and Geomatics Technology with K-12 Students*, Presented at the Second Annual ESRI Education Conference, San Diego, CA, July 2002
- Meyer, Thomas H.; Bean, John E.; Ferguson, C. Roger; and Naismith, James M., *The Effect of Broadleaf Canopies on Survey-grade Horizontal GPS/GLONASS Measurements*, Surveying and Land Information Science, Vol. 62, No. 4, 2002, pp. 215-224
- Bean, J. E., *GPS for GIS Data Collection*, Presented at the Connecticut Arc-User Conference, Storrs, CT, July 1998
- Bean, J. E. and Smith, C., *GIS/GPS for Environmental Applications*, Presented at the Connecticut Arc-User Conference, New Britain, CT, July 1997
- Ferguson, C. R. and Bean, J. E., *Bringing New Surveying Technology into Civil Engineering and Construction Engineering Technology Classrooms*, Journal of Surveying and Land Information Systems and presented at Surveying and Geomatics Teachers Conference, Las Cruces, NM, June 1997
- Bean, J. E. and Brown, E. B., *Surveying and Mapping Exercises for Middle and High School Students*, Presented at the 1997 Connecticut Science Teachers Association Annual Meeting and Conference, New Britain, CT, March 1997
- Ferguson, C. R. and Bean, J. E., *Factors Affecting Carrier-Phase GPS Results*, Presented at GIS/LIS '96, Denver, CO, November 1996
- Bean, J. E. and Ferguson, C. R., *Real-Time and Post-Processed Differential GPS for Dynamic Applications*, Presented at ACSM/ASPRS '95, Charlotte, NC, March 1995
- Ferguson, C. R. and Bean, J. E., *Single vs. Multiple GPS Sessions - Many vs. Few Receivers*, Presented at ACSM/ASPRS '95, Charlotte, NC, March 1995
- Ferguson, C. R. and Bean, J. E., *Using Continuously Operating Reference Stations (CORS) - The Connecticut DOT Model*, Presented at ACSM/ASPRS '95, Charlotte, NC, March 1995
- Ferguson, C. R., Langley, L. M. and Bean, J. E., *Private Surveyor Terrestrial Boundary Traverses Controlled by GPS*, Proceedings, GIS/LIS '94, Phoenix, AZ, October 1994
- Bean, J. E. and Zibbideo, C., *Differential Code-Phase GPS Receiver Accuracy Studies: Real-Time and Post-Processed Results for Static and Dynamic Applications*, Presented at the Third Annual Connecticut GIS Exposition, Storrs, CT, July 13, 1994
- Ferguson, C. R., Langley, L. M. and Bean, J. E., *GPS at the Boundary Survey Level*, Presented at the Third Annual Connecticut GIS Exposition, Storrs, CT, July 13, 1994

Publications and Presentations, Continued

- Murtha-Smith, Erling; Hwang, Sun-Hee; and Bean, John E., *Load Transfer in a Space Frame Connection*, International Journal of Space Structures 7(3):191-200
- Murtha-Smith, Erling; and Bean, John E., *Double Layer Grid Space Frame Buckling*, International Journal of Space Structures 4(3):117-127

STEM Outreach

UAA Geomatics Outreach (elementary school-high school) 2009-2017

Recruiting

Gave presentations and manned booths at several high schools in the Anchorage area

Geomatics

Developed, delivered and recruited undergraduate students to deliver lessons in GPS mapping, leveling, total station surveying and GIS. Wrote proposals and received funding for this on-going effort.

Clarkson STEM Program (middle-school) 2004-2006

Antarctic Program

School visits and project overview

Design and deliver ice laboratory experiments

Blog and Podcast from McMurdo Station, Antarctica

Project-Based Learning

Developed and delivered lessons and hands-on experiences for twelve middle-schools as part of a grant-funded team of faculty and students

Saturday Scholars Program (middle school) 1994-1998

Road cross sections

GPS mapping

GIS mapping

Fisher's Island School (elementary school-high school)

Golf Course Mapping

Natural Resources Mapping

Data Analysis for Science Fair

Fields Memorial Middle School Surveying Outreach 1990-2000

Leveling

GPS mapping

Total station survey of a lake

Bozrah River Study (middle school)1991

Cross sections of a medium-sized stream in town for science class

Student Trips Led

- ***Mojave Desert*** 2003, 2007, 2009 - Led a group of students from Paul Smith's College for ten days to perform volunteer projects in the Mojave Desert for various government and private agencies
- ***ACSM Conference***, Salt Lake City 2005 – Led a group of six students from Paul Smith's College to attend a national surveying conference for five days
- ***MIT SPLASH Weekend*** 1997, 1998 - Led four students from Central Connecticut State University to help teach a course in GPS Mapping at the Massachusetts Institute of Technology's SPLASH Weekend for middle- and high-school students

Volunteer Service to Outside Agencies

- Mapping of invasive plants for ***Joshua Tree National Park***
- Roadside pull-out mapping for ***Joshua Tree National Park***
- Wilderness boundary mapping n the California/Nevada state line for ***California BLM***
- Mapping of Creosote (*Larrea D*) for ***UCLA mapping project***
- Trail mapping for the ***Mojave Road Historic Society***
- Adirondack lake mapping for the ***Adirondack Aquatic Institute***
- GIS creation for the ***University of California's Granite Mountain Desert Research Center***
- GPS mapping and GIS development for the ***Connecticut Forest and Parks Association***
- Survey a portion of the railroad reestablishment project ***Gillette Castle State Park, Connecticut***
- Boundary survey of a 420 acre parcel adjacent to the Appalachian Trail in Salisbury, CT for the ***Connecticut Nature Conservancy***

Full-time Industrial Experience

- **Survey Party Chief**, U.S. Army Corps of Engineers, Concord, MA, 6/2020-Present
Work as the lead topographic surveyor for the New England Division of the U.S. Army Corps of Engineers (USACE). Direct the work of one survey technician and provide technical guidance and recommendations to the Chief of Surveys for the Division. Work includes precise deformation monitoring surveys for flood control dams and hurricane barriers, control surveys in support of harbor dredging activities and topographic surveys in support of civil engineering construction activities. Work on projects throughout New England using GPS, digital level, robotic total station and data collection tools.
- **Survey Party Chief**, F. R. Bell Surveying and Engineering, Anchorage, AK, 5/2015-8/2015
Summer position surveying for the Alaska LNG project on the North Slope of Alaska. Party Chief responsible for the work of two other surveyors, a bear guard and a helicopter pilot. Oversaw work for setting, recovering and positioning survey control monuments between Point Thompson and Deadhorse, Alaska.
- **Cadastral Surveyor**, SurvBase, LLC, Anchorage, AK, 2/2014 to 8/2014
Worked as a surveyor on a variety of boundary, control and topographic survey projects. Customize ArcGIS to integrate data from ground surveys with data from other sources.
- **GIS Manager** - HDL Engineering, LLC, Anchorage, AK, 9/2012-2/2014, 8/2014-5/2015
Managed the GIS operations for a medium-sized engineering consultant. Responsibilities included developing standards for GIS data and use, maintaining local data stores, user assistance and education as well as performing spatial analysis in support of engineering projects. Used Python to perform system tasks and ArcGIS tool development.
- **Senior Engineer** - General Dynamics/Electric Boat Division, Groton, CT, 1983-1990
Involved in analysis, research and development in the structural analysis area using finite and boundary element methods. Responsible for the project management of several large structural analysis tasks and for directing the work of junior engineers on those tasks. Computer program development and maintenance using FORTRAN.
- **Staff Engineer** - Town Engineer's Office, Hudson, NH, Summer, 1982
Inspected construction in progress on roadways and sewers. Evaluated existing roadways and estimated the cost to repair. Reviewed site plans submitted to the town's zoning and planning boards for approval.
- **Surveyor** - Survey Field Services, Epsom, NH, Summer 1981
Performed fieldwork for an as-built survey of the waste treatment system in Berlin, NH.
- **Engineering Technician I (Survey)** - New Hampshire DOT, Concord, NH, Summer 1990, 1978 to 1980, Performed survey fieldwork on route, boundary, construction, topographic and hydrographic surveys.

Consulting Work

- Alaska North Slope Coastal Erosion Surveying and Mapping Support, 2018-Present
- GIS Database Design Consultant, **Sun'aq Tribe**, Kodiak, AK - 2012 to 2016
- Surveying Project Manager, **California Creek Micro Hydro Power Feasibility Study** - 2010
- Project Manager, GIS development for **Fishers Island Utility Company** - 1997 to 2000
- Supervisor, GIS address matching for the **Metropolitan District Commission** - 1997 to 2002
- Technical Advisor, GPS control proposal development, **Windham Surveyor Consortium** -1998
- Technical Advisor, GPS control project, **Healy Surveying** - 1996
- Structural Engineer, **AMI Research, Inc.**, New London, CT - 1991
- Site Design Engineer, **Camp Land Surveyors**, Norwich, CT - 1990

GIS and Mapping Project Experience

Alaska North Slope Coastal Erosion Surveying and Mapping Support (AK)

Provide survey control, maps, and data collection protocols for researchers on coastal mapping research projects. 2018-Present.

Alaska Energy Authority Geothermal Resource Study (AK)

Developed and delivered multiple geodatabases to support energy studies for the Tenakee geothermal resource in support of engineering work performed by HDL Engineering, LLC. Integrated survey data with data from a variety of other sources to provide a seamless database with metadata documentation. Contact: Lorie Dilley, PhD, Principal Engineer, HDL Engineering, LLC, 3335 Arctic Blvd., Suite 100, Anchorage, AK, 99503, 907-564-2120

Sun'aq Tribal Resource GIS Database Design (AK)

Consultant to perform database design and data collection procedures. Contact: Pamela Bumsted PhD., Manager of Natural Resources, Sun'aq Tribe of Kodiak, 312 Marine Kodiak, AK, 907-486-4449

California Creek Micro-Hydro Power Feasibility Study (AK)

Survey project manager responsible for establishment of control, performing topographic survey and presentation of results. Contact: Orson W. Smith P.E., PhD, Civil Engineering Professor, University of Alaska Anchorage, 3211 Providence Dr., Anchorage, AK 99508, 907-786-1910

University of California's Granite Mountain Desert Research Center GIS Development and Mapping (CA)

Consultant to perform database design and supervise mapping of facility using RTK GPS and DGPS. Contact: Jim Andre, Sweeney Granite Mountains Desert Research Center, P.O. Box 101, Kelso, CA 92351, 760-733-4222

Fishers Island Utility Company GIS Database Design and DGPS Mapping, (NY)

Consultant to perform database design and supervise DGPS mapping of electrical, telephone and water system assets. Contact: J. Christopher Finan, VP Fishers Island Utility Co., 161 Oriental Ave Drawer E, Fishers Island, NY 06390, 631-788-7251

Joshua Tree National Park Roadside Pull-Out DGPS Mapping (CA)

Managed a group of ten (10) students in performing a survey of informal roadside pull-outs and "social trails" using DGPS. Attributed features with such items as width, condition and number of social trails using a custom data dictionary.

Joshua Tree National Park Invasive Plant DGPS Mapping (CA)

Managed a group of eight (8) students in performing a survey of invasive plants using DGPS. Collected points in a grid fashion and assigned user-estimated density factors on a likert scale. Performed analysis on data collected over 3000 acres of desert terrain.

California/Nevada State Line DGPS Mapping for BLM (CA)

Managed a group of four (4) students in locating the state line between California and Nevada in the Mojave Desert using DGPS. Located bounding survey control monuments separated by five miles then used DGPS to mark the approximate location of the line between them.

Workshops Taught

- ***Python Programming for ArcGIS***, offered by URISA Alaska, Anchorage, AK, November 2017
- ***OPUS Projects Training***, offered by the National Geodetic Survey, Co-Taught with Alaska NGS Regional Advisor Nic Kinsman, Anchorage, AK, November 2016
- ***Understanding GIS Data Accuracy***, Alaska Department of Transportation
 - Juneau, AK, November 2012, Fairbanks, AK, Nov. 2011, Anchorage, AK, April 2011
- ***Basic GIS for Surveyors***, Alaska Surveying and Mapping Conference, Anchorage, AK, February 2011
- ***Dealing with Spatial Reference Systems in ArcGIS***, Alaska Surveying and Mapping Conference, Anchorage, AK, Feb 2011
- ***GIS for Surveyors***, Alaska Surveying and Mapping Conference, Anchorage, AK, February 2010
- ***Practical GIS for Surveyors***, American Congress on Surveying and Mapping
 - ACSM/ASPRS Conference, Las Vegas, NV March 2005. Co-taught with Mickie Warwick (U. of Arkansas)
 - ACSM Conference, Orlando, FL, April 2006
 - ACSM-New England Section Workshop, Auburn, MA 2006
 - NYSAPLS Workshop Paul Smiths, NY, June 2009, Brooklyn, NY, June 2009
 - NYSAPLS Workshop, NYSAPLS Conference, Verona, NY, January 2010
 - NYSAPLS Workshop – Alfred, NY, June 2010
- ***Introduction to ArcView*** - Connecticut Department of Environmental Protection, Connecticut Department of Health, Metropolitan District Commission, Maquire Group Engineers, City of Hartford (1996-2002)
- ***Introduction to GPS*** - American Congress on Surveying and Mapping - ACSM/ASPRS 2000 Conference, Providence, RI, December 2000. Co-taught with Dr. Thomas Meyer of the University of Connecticut (Also ACSM-FIG Conference April 2002, CALS Workshop 2002, ACSM-New England Workshop 2001)
- ***GPS Surveying*** - Connecticut Department of Transportation, Metropolitan District Commission (2000)
- ***GPS Mapping*** - Connecticut Department of Environmental Protection (1994, 1996, 1999)

Professional Society Memberships and Offices

National Society of Professional Surveyors Foundation

- Director 2019-Present

American Association for Geodetic Surveying

- Director 2018-2021

Alaska Surveying and Mapping Conference

- Planning Committee 2009-2013, 2017
- Director 2010-2011
- Conference Chair 2011-2012

Geographic and Land Information Society

- Fellow 2001 - 2016
- Director, 1997-2016
- President, 2004, 2007

GIS Certification Institute

- Director, 2013-2015

Surveying and Land Information Systems Journal

- Director, 2014-2021