APPENDIX A: COMPREHENSIVE RESUME

I. General

A. Name: Steven D. Leftwich

B. Present rank and department: Professor, Civil Engineering

C. Degrees held, dates, institutions:

1. Ph.D.C.E., Civil Engineering, January 1980, University of Virginia
2. M.S.C.E., Civil Engineering, May 1977, University of Virginia
3. B.S.C.E., Civil Engineering, August 1975, West Virginia Tech

D. Date first employed at WVU Tech: August 1987

E. Dates of promotion and rank:

1. Chair of Civil Engineering – August 2005 – Present
2. Interim Chair of Civil Engineering–August 2004–July 2005
3. Interim Chair of Civil Engineering–August 2001 – December 2001
4. Acting Chair of Civil Engineering–August 1998 – May 1999
5. Professor– August 1994
6. Associate Professor–August 1989
7. Assistant Professor–August 1987

F. Date of tenure: August 19, 1991

G. Total years of college teaching & professional experience:

1. College teaching: 25.5
2. Other professional experience: 12.0

H. Teaching experience record – where, when, etc.:

1. West Virginia University Institute of Technology - August 1987 to present:
   Professor of Civil Engineering

2. Marshall University Graduate College, South Charleston, WV- 1990 to present:
   Adjunct Associate Professor of Civil Engineering
   Instructor of structural analysis and design for the Civil Professional Engineering (PE) Review Course and the statics, strength of materials, and fluid mechanics reviews for the Fundamentals of Engineering (FE) Review Course.

3. Bechtel National, Inc., San Francisco, California. 1986 - 1987

Instructor of structural design for the Civil Engineering PE Review course and the FE Review Course.

I. **Non-teaching work experience – include a brief description of job title**

1. Summer 1989 - Senior Engineer, Bechtel National, Inc., Savannah River Facility, Aiken, South Carolina. I worked on pipe routing and designed pipe supports in the Vitrification Building on the Defense Waste Processing Facility.
2. 1979 to 1987 - Senior Engineer, Bechtel National, Inc., San Francisco, California. I worked on several projects, some of which included:
    - The structural and wind load analyses of the Shuttle Assembly Building (SAB) at Vandenberg Air Force Base, Lompoc, California. This building enclosed the Space Shuttle during assembly operations on the launch platform. Vandenberg was the proposed west-coast launch site of the Space Shuttle during the 1980s. The SAB was built but was never used due to the loss of Challenger spacecraft in 1985.
    - The creep analysis of the salt caverns of the Waste Isolation Pilot Plant (WIPP) in New Mexico. WIPP was a facility for the nuclear storage of low-level nuclear waste. Nuclear waste was to be stored in drums in underground storage rooms that were excavated in salt strata. Creep models were developed and analyses were performed using finite elements. These models were then used to predict the time required for such storage rooms to completely collapse and encapsulate the nuclear waste.
    - The ground fault displacement analysis on a building on the Yucca Mountain Waste Repository in Nevada. A very elementary finite element model of the building and the surrounding soil was used to predict if a building on this facility could accommodate a specified fault displacement.
3. 1976 to 1979 - Graduate Assistant, Virginia Highway and Transportation Research Council, Charlottesville, Virginia. I worked on two projects which were used for my M.S. thesis and my Ph. D. dissertation. These included:
    - The development of a finite element model and subsequent stress analysis of the haunch region of a rigid frame bridge. The finite element results were compared with previously obtained experimental data for verification of the model.
    - The theoretical development of the effects of nonuniform shear loading on beams. The governing differential equations for nonuniform shear were derived and a finite element was developed to predict the deformations and associated stresses on the beam cross section.

II. Teaching

A. Teaching responsibilities

1. Courses/Labs taught with enrollments
   - Fall 2012
     - CE 463 Structural Steel Design – 3 hr. lecture, 1 hr lab, 9 students.
     - CE 479 Integrated Civil Engineering Design – 3 hr. lecture; 3 students
     - ENGR 402 FE Review (Instructor of record, coordinated course teaching schedule and co-taught 3 lectures) – 2 hr. lecture; 9 students.
   - Spring 2012
     - ENGR 111 Software Tools – 3 hr. lecture, 9 students.
     - CE 361 Structural Analysis 1 – 4 hr. lecture, 4 students
     - ENGR 402 FE Review (Instructor of record, coordinated course teaching schedule and co-taught 3 lectures) – 2 hr. lecture; 23 students.
2. Graduate students supervised – Since joining the WVU Tech faculty in August 1987, I have directed research projects for 3 graduate students that include (1) the structural analysis and evaluation of the designs of one, two, and three-axle utility trailers; (2) the preliminary structural design of a single-story masonry building with a steel-joist roof system; and (3) the evaluation of the effectiveness of several lateral load resistive systems in steel high-rise buildings. The graduate program was eliminated in the early 1990s and will hopefully be reinstated soon.
3. Clinical assignments - NA

B. Counseling and academic advising: I am the advisor for 25 students in the Civil Engineering Program at Tech. I advise students during the registration periods and throughout the semester on an as-needed basis. As Chair, I perform transfer evaluations for both incoming and prospective students. In addition, the Chair must perform one graduation check for seniors to ensure that all of their course work is completed before graduation. The graduation check by the chair is performed on each senior student the semester before graduation. The final graduation check is performed by the Registrar the semester of graduation

C. Collateral course responsibilities, library acquisitions, etc.: For fall 2011 and spring 2011, I was the lead instructor of record and had collateral teaching responsibilities (3 lectures) for ENGR 402 Fundamental of Engineering (FE) Review.

D. Laboratory and/or course development

1. Development of new course/lab –

Due to Dr. Kwigizile's resignation in July 2011, I taught CE 204 Surveying plus laboratory for the first time in fall 2011. I modified the contents of some of the laboratory sessions in response to real world topics that students should know when they graduate. In addition, I taught two sessions of structural analysis/steel design/reinforced concrete design for those civil engineering students that wished to review for the afternoon session of the FE Review. These sessions were in addition to those normally taught in ENGR 402 FE Review.

2. Updating course/lab content – no updates of previous courses that I taught were required.

   I have attended over 41 seminars and workshops in my career at Tech to remain current in the design specifications for steel, reinforced concrete, masonry and timber design.

E. Teaching aids or methods employed:

1. Use of computer technology- I use up-to-date software in several of my classes. I use SAP 2000, a finite element structural analysis program, in CVLE-212 Structural Analysis and CVLE-415 Advanced Structural Analysis. In CVLE-415 Advanced Structural Analysis, I use Excel combined with Visual Basic to have the students develop and write a beam finite element program for frame analysis. In CVLE-414 Structural Steel Design, I have the students write a base plate analysis program using either Excel or MathCad. In CVLE-417 Timber Design, I have the students write a nail and bolt analysis program using Excel.
2. Distance learning methods – I use STAAD.Pro and SAP 2000 structural analysis programs for CE 361 Structural Analysis 1. STAAD.Pro and SAP 2000 are commercially available finite element programs that are used throughout the civil engineering industry. I also used WolfPack, a surveying software program that came with the surveying textbook.
3. Web applications – I used eCampus to communicate with my CE 204 Surveying class. In addition, I completely developed and put on a shared drive (N) all of the curriculum pattern sheets for our advisees. By using the shared drive, all of the CE faculty have up-to-date pattern sheets for all of their advisees. At the end of each semester, our Administrative Assistant, Ms. Dana Arthur, will enter the final grades in the pattern sheets to keep them all up-to-date. In addition, I also continue to modify and update our Civil Engineering Department website on an as-needed basis.
4. Other - I attempt to introduce state-of-the-art methods and materials into the classroom. These include the teaching of the current Codes and Standards used

in industry to assigning homework that will familiarize students with personal computers. My lectures consist of black board presentations supplemented with overhead projector transparencies, PowerPoint presentations, and handouts.

Self Evaluation of Teaching Effectiveness

- The Senior Exit Interviews for spring 2011 almost had all favorable comments from students. Using a Likert scale from 0 to 5 (best), all of the CE instructors were rated by the graduating seniors. I received a rating of 4.00 for the fall 2011 semester and a rating of 4.38 for the spring 2011semester. Almost all comments were excellent.

- For fall 2011, student evaluation ratings for CE 361 Structural Analysis 1 ranged from a low of 4.00 to a high of 5.00 with an overall average of 4.76. Student comments were all excellent.

  The student evaluation ratings for CE 204 Surveying (lecture portion) ranged from a low of 3.62 to a high of 4.62 with an overall average of 4.11. The student comments were typically good to excellent. The student evaluation ratings of CE 204 Surveying Laboratory ranged from a low of 3.38 to a high of 4.31 with an overall average of 3.97. Student comments were generally good to excellent.

- For spring 2011, student evaluation ratings for MAE 331 Fluid Mechanics ranged from a low of 4.00 to a high of 5.00 (highest rating) with an overall average of 4.75. Student comments were generally positive.

  The student evaluation ratings for CE 479 Integrated Civil Engineering Projects ranged from a low of 1.00 to a high of 4.25 with an overall average of 3.20. Comments from the class were mostly negative ranging from assignments not being returned or graded in a timely manner (these comments were true) to the project being assigned too late in the semester and that the project did not involve any design (these two comments I take issue with). I have taught this course several times and I try to give realistic design projects which typically do not get fully defined until about the middle of the semester. Students, regardless of when the project is defined, typically wait until the last two to three weeks of the semester to really start working on the project. The students then panic to finish and end up becoming overwhelmed on the assignment.

  This particular project involved the structural evaluation of the Coed Dorm

at Tech. While this particular project did not involve any new design from the beginning, it did involve structural evaluation which encompasses mostly design and repair procedures. My directions to the students were to look for structural problems and then come up with repair procedures and to estimate the costs to do such repairs. I was available at any time to provide help but I was not going to do it for them. This particular group of students did not come to either me or Dr. Lee to get any help on the structural evaluation. What eventually the students did were that they relied upon the results of a previous engineering structural evaluation of Coed Dorm (performed by an engineering company a few years earlier) and they just made similar or identical recommendations in their final report. Their final report did not really address the issues that I wanted.

- Course assessments of learning outcomes were performed for all of my courses for fall 2011 and spring 2011 semesters using the ClassAct© software. Two types of assessments were performed for each course: (1) assessments based on student performance via homework, tests, quizzes, etc. and (2) self-assessments by students performed using questionnaires at the end of each semester. The target percentage for achieving a learning outcome has been set at 70% by the Civil Engineering Department. The following are the results of how well the learning outcomes were achieved for each class:
    - CE 204 Surveying (fall 2011) – all learning outcomes achieved the targeted 70% with the exception of one (68%).
    - CE 361 Structural Analysis I – three learning outcome were not evaluated because the topics involved were put at the end of the semester and were not covered due to time limitations. Of the topics covered, only one learning outcome did not achieve the targeted 70% value (it attained 56%).
    - MAE 331 Fluid Mechanics (spring 2011) – all learning outcomes achieved the targeted 70% with the exception of one (65%).
    - CE 479 Integrated CE Design (spring 2011)– all learning outcomes achieved the targeted 70% with the exception of one (67%) on the self assessment by students. Two learning outcomes had not graded homework or tests to give a classroom composite score.

  The full course assessments for the 2011 year are included in my file.

- In addition, I am the instructor-of-record for the ENGR 402 FE Review courses. The FE Review courses were co-taught by eight different instructors. Thus, the student evaluations and comments given for that class are not necessarily attributed to any one instructor.

- My own evaluation of my teaching effectiveness is that I offer a balance between the academic and practical viewpoints of civil engineering. I continually work problems and examples in class that are of a practical nature and are similar to those asked on the Professional Engineering Examination.

III. Scholarship

A. Extension of training: Short courses, seminars, institutes, reading in current literature, etc:

1. September 2012 – Attended "Retaining Wall Design and Slope Stabilization Techniques", 6.0 professional development hours (PDHs), sponsored by HalfMoon LLC, Charleston, WV.
2. May 2012 – Attended "Ethics for Surveyors: A Prerequisite for Professionalism", 4.0 PDHs, Bridgemont Community & Technical College, Montgomery, WV.
3. May 2012 – Attended "Coal Mine Safety and Health Law for Engineers and Surveyors in West Virginia", 4.0 PDHs, Bridgemont Community & Technical College, Montgomery, WV.
4. November 2011 – Attended the 47th Annual Fall Technical Conference, 5.0 PDHs, WVU Institute of Technology, Montgomery, WV.
5. June 2011 – Attended "Boundary Research in West Virginia and Research Analysis", 4 PDHs, Bridgemont Community & Technical College, Montgomery, WV.
6. June 2011 – Attended "Drawing Fire: Surveying and Mapmaking in the American Civil War", 4 PDHs, Bridgemont Community & Technical College, Montgomery, WV.
7. April 2011 – Attended the PCI Structural Design Seminar, 7.5 PDHs, Columbus, OH.
8. November 2010 – Attended one session of the 46th Annual Fall Technical Conference, WVU Institute of Technology, Montgomery, WV.
9. November 2010 – Attended "Effective Steel Design: Step-by-Step Design for Commercial and Industrial Buildings", AISC Seminar, 8.0 professional development hours (PDHs), Pittsburgh, PA.
10. November 2010 – Attended three sessions of an AISC Seminar:
    - "HSS Connection Design/Dos and Don'ts of Steel Construction"
    - "Chapter N: Quality Control and Quality Assurance"
    - "Design Stability Using the 2005 AISC Specification"

    6.0 PDHs, Pittsburgh, PA.
11. June 2010 – Attended "Boundaries Along Streams and Roads in West Virginia", 4 PDHs, Bridgemont Community & Technical College, Montgomery, WV.

12. June 2010 – Attended "Obtaining, Interpreting and Correcting Legal Descriptions; and Tips for Determining Preliminary Boundary Locations", 4 PDHs, Bridgemont Community & Technical College, Montgomery, WV.
13. April 2010 – Attended "Design Steel Your Way II: Effective Analysis for Steel Design Using the 2005 AISC Specification", AISC Seminar, 8.0 PDHs, Cincinnati, OH.
14. January 2010 – Attended the Marshall University Winter Technical Conference, 5.5 PDHs, Marshall University, Huntington, WV.
15. December 2009 – Attended "Practical Connection Design for Economical Steel Structures" seminar for 8.0 professional development hours (PDHs), American Institute of Steel Construction (AISC), Charleston, WV.
16. November 2009 – Attended the 45th Annual Fall Technical Conference, 5.0 PDHs, WVU Institute of Technology, Montgomery, WV.
17. October 2009 – Attended "ABET Faculty Workshop on Sustainable Assessment Processes", San Antonio, TX.
18. May 2009 – Attended "Basic Boundary Concepts/Common Sense for Surveyors", 4 PDHs, Community & Technical College, WVU Institute of Technology, Montgomery, West Virginia.
19. May 2009 – Attended "Getting' Down with the Neighbors: Adjoiner Relations for Boundary Surveying", 4 PDHs, Community & Technical College, WVU Institute of Technology, Montgomery, West Virginia.
20. February 2009 – "ACI/PCA 318-08 Building Code Seminar", 8.0 PDHs, American Concrete Institute, Williamsburg, VA.
21. January 2009 – "Joint Concrete Seminar", Sixth Annual Concrete Seminar, 6.0 PDHs, West Virginia Department of Highways, Flatwoods, WV.
22. November 2008 – Attended the 44th Annual Fall Technical Conference for 2.0 professional development hours (PDHs), WVU Institute of Technology, Montgomery, WV. Attended two sessions of the conference.
23. November 2008 – Attended "Minimum Standard and Professional Ethics for Surveyors", 8 PDHs, Parkersburg/Vienna, West Virginia.
24. September 2008 – Attended the Appalachian Transportation Institute Workforce Summit, Beckley, WV.
25. June 2008 – Seminar "Easements: Rights of Way and Other Encumbrances", 8.0 PDHs, PESI Real Property, Charleston, WV.
26. March 2008 – "Adobe Acrobat: Editing & Managing PDF Files", Community and Technical College at WVU Institute of Technology, Montgomery, WV.
27. November 2007 – Attended the 43rd Annual Fall Technical Conference for 5.0 professional development hours (PDHs), WVU Institute of Technology, Montgomery, WV.
28. July 2007 – Attended the ASCE seminar, "Wind Loads on Structures", 1.4 Continuing Education Units (CEUs), Nashville, TN.
29. May 2007 – Attended the seminar "Integrating GPS and GIS: An

Introduction", 4.0 PDHs, WVU Tech Community and Technical College, Montgomery, WV.

30. May 2007 - Attended the seminar "State Roads, County Roads, Old Turnpikes and Highways in (West) Virginia", 4.0 PDHs, WVU Tech Community and Technical College, Montgomery, WV.
31. November 2006 – Attended the 42nd Annual Fall Technical Conference for 6.0 PDHs, WVU Institute of Technology, Montgomery, WV.
32. August 2006 – Attended for two days the North American Professors' Conference, "Discover Educational Opportunities in Teaching Wood Design," Vancouver, British Columbia.
33. November 2005 – Attended the 41st Annual Fall Technical Conference for 6.0 PDHs, WVU Institute of Technology, Montgomery, WV.
34. October 2005 – Attended the 2005 AISC Educator Session titled "Introduction to the New AISC 2005 Specifications for Structural Steel Buildings", 4.0 PDHs, Chicago, IL.
35. May 2005 – Attended "Introduction to Microstation", 4.0 PDHs, WVU Tech Community & Technical College, Montgomery, WV.
36. May 2005 – Attended "West Virginia Minimum Standards for Surveyors", WVU Tech Community & Technical College, Montgomery, WV.
37. January 2005 – Attended the "Noel-Levitz College Student Inventory Workshop", WVU Institute of Technology.
38. June 2004 - Attended ACI Seminar *Reinforced* Concrete *Design*, 15.0 PDHs, Jacksonville, Florida.
39. June 2004 - Attended "Dendrology", a half-day seminar on tree identification, 4.0 PDHs, WVU Tech Community & Technical College, Montgomery, WV.
40. February 2004 - Attended the *Professional Ethics and Minimum Technical Standards Workshop for Land Surveyors*, (8.0 PDHs), Glenville State College, Glenville, WV.
41. June 2003 - Attended a *Basic Mine and Surveying & Mapping Seminar,* 8.0 PDHs, Beckley, WV.
42. May 2003 - Attended the *Seismic Site Classification as Required by the International Building Code (IBC-2000)* seminar, 3.0 PDHs, WV State College, Institute, WV.
43. November 2002 - Attended the ASCE Fall Technical Conference *Current and Future Transportation Issues in West Virginia* for 6.0 continuing education units (CEUs) in Montgomery, WV.
44. May 2002 - Attended the ASCE *Design of Metal Building Systems* seminar, 1.4 CEUs in Tampa, Florida.
45. March 2002 - Attended the *Applications in West Virginia Boundary Law* workshop, 8.0 PDHs, Charleston, WV.
46. February 2002 - Attended the "Fundamentals of Connection Design" AISC seminar held in Charleston, WV.

47. September 2001 - Attended the "AISC Web-Enhanced Teaching of Structural Steel Design" workshop held at the Kansas State University, Lawrence, Kansas.
48. March 2001 - Attended the "ABET 2000 - Outcomes Assessment" workshop held at WVU, Morgantown, WV.
49. September 2000 - Attended the "Engineered Wood Systems, *Contemporary Construction Applications"* seminar held at WVU Tech.
50. June 2000 - Attended the "Lateral Framing Systems East of the Rockies" seminar that was sponsored by the American Institute of Steel Construction and held in Cincinnati, Ohio.
51. May 2000 - Attended the "Engineered Wood Products Seminar" seminar that was sponsored by the APA - The Engineered Wood Association and held in Independence, Ohio.
52. April 2000 - Attended a two-day workshop called "Almost Heaven WebCT Conference" that was held at the Marshall University Graduate College, Charleston, West Virginia.
53. August 1999 - Attended three faculty workshops at WVU Tech. These included a PowerPoint I (Basic), Community Service, and Groupwise Training.
54. August 1999 - Attended a two-day conference on "Teaching Steel Bridge Design," sponsored by the American Iron & Steel Institute, Washington, D.C.
55. February 1999 - Attended Legislative Day for Engineers at WV State Capitol, Charleston, WV.
56. February 1999 - Attended seminar on "Retaining Wall Systems", held at Dunbar, WV.
57. February 1999 - Participated in Engineer's Week at Sunrise Museum in Charleston, WV.
58. September 1998 - Attended the *Engineered Wood Systems, Contemporary Construction Applications* seminar held at WVU Tech.
59. July 1998 - Attended a 2 ½ -day *Professors' Seminar on the Engineering and Economics of Reinforced Concrete Buildings*, 17.0 PDHs, sponsored by the Portland Cement Association in Skokie, Illinois.
60. August - December 1997 - Attended a Visual Basic computer class held at WVU Tech.
61. August 1997 - Attended an all-day workshop on Powerpoint presentations held at WVU Tech
62. July 1997 - Attended the one-week course "Wind Mitigation Design", held at the Multihazard Building Design Summer Institute, Emmitsburg, Maryland. This course was sponsored by the Federal Emergency Management Agency.
63. July 1997 - Attended the one-week course "Earthquake Mitigation Design", held at the Multihazard Building Design Summer Institute, Emmitsburg, Maryland. This course was sponsored by the Federal Emergency Management Agency.

64. May 1997 - Attended an all-day workshop on the electronic classroom held at WVU Tech.
65. January 1997 - Attended a half-day Internet workshop held at WVU Tech.
66. October 1996 - Attended the "Engineered Wood Systems, *Contemporary Construction Applications"* seminar held at WVU Tech.
67. October 1996 - Attended an American Institute of Steel Construction seminar on "Selecting Structural Steel Systems," 0.5 CEUs, Charleston, WV.
68. May 1996 - Attended the STEEL BRIDGE FORUM, WVDOH, 0.7 CEUs, Charleston, WV.
69. September 1995 - Attended "Seismic Design and Performance of Buildings,", ASCE, 1.4 CEUs, Charlotte, NC.
70. November 1994 - Attended the "Engineered Wood Systems, Contemporary Construction Applications", 2.5 PDHs, WVIT, Montgomery, WV. .
71. September 1994 - Attended an American Institute of Steel Construction seminar on "Innovative Practices in Structural Steel," 0.4 CEUs, Richmond, Virginia.
72. August 1994 - Attended the seminar "Load Factor Design", 7.0 PDHs, WVDOH, Charleston, WV.
73. July 1994 - Attended a seminar on AASHTO Load Factor Bridge Design, WVDOT, 7.0 PDHs, Charleston, WV.
74. May 1994 - Attended a seminar on "Effective Concrete Joints", sponsored by the Concrete Reinforcing Steel Institute, Charleston, WV.
75. September 1993 - Attended an American Institute of Steel Construction Lecture Series on "New Ideas in Structural Steel," Richmond, Virginia.
76. May 1-2, 1993 - Attended the "The New Madrid Seismic Zone, A Field Trip for the 1993 National Earthquake Conference," Memphis, Tennessee.
77. May 2-5, 1993 - Attended the 1993 National Earthquake Conference on "Earthquake Hazard Reduction in the Central and Eastern United States: A Time for Examination and Action," Memphis, Tennessee.
78. April 1991 - Attended an American Institute of Steel Construction Lecture series on LRFD, Richmond, Virginia.
79. March 1990 - Attended Structural Engineering Conference at Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
80. December 1988 - Completed a scuba diving course at West Virginia Tech, earned 2.4 CEUs.
81. November 1988 - Attended the University Professors Masonry Workshop at North Carolina State University, Raleigh, North Carolina.
82. July 1988 - Attended the Summer Institute on Wood Engineering Design Principles for College Faculty, a two-week workshop in Timber Design at Marquette University, Milwaukee, Wisconsin.
83. May 1988 - Attended the Timber Bridge Conference at Charleston, West Virginia.

84. April 1987 - Attended *"Strong Ground Motion: Seismic Analysis, Design, and Code Issues,"* a two-day course from The Earthquake Engineering Research Institute (EERI), San Francisco, California.
85. February-May 1986 - Completed the course *"Applications of Vibration Engineering,"* sponsored by Bechtel National, Inc., San Francisco, California.
86. November 1983 - Attended *"Steel Design Current Practice Lecture Series,"* sponsored by the American Institute of Steel Construction, 1.0 CEUs, San Francisco, California.
87. February 1983 - Attended *"Welding for Engineers,"* a seminar sponsored by the American Institute of Steel Construction and Structural Steel Education Council, San Francisco, California.
88. June 1982 - Completed the course *"FLUSH Analysis,"* sponsored by Bechtel National, Inc., San Francisco, California.
89. July 1980 - Completed the course *"Structural Design for Earthquakes,"* University of Southern California, 3.25 CEUs, Los Angeles, California.
90. April-August 1980 - Completed the course *"Structural Dynamics,"* sponsored by Bechtel National, Inc., San Francisco, California.

B. Professional societies:

1. Membership
   - American Society of Civil Engineers, Member
   - Tau Beta Pi, Member
2. Participation in activities: I have limited involvement in ASCE activities. I am the chief advisor at WVU Tech for Tau Beta Pi. As chief advisor, I have the primarily responsibility for evaluating the eligibility of junior and senior engineering students for election and subsequent induction into Tau Beta Pi.

C. Consulting work:

I have performed several book reviews. These include:

- "Structures made Easy", for Pearson Education (previously Prentice Hall & Addison Wesley Longman in the UK). It was a Master's thesis considered for possible publication into a textbook to aid students in the calculations involved in that topic.
- W. Morgan's The Elements of Structure, Second Edition, edited by Ian G. Buckle, Longman Scientific & Technical, 1978. In March of 1997, I reviewed the book to ascertain whether a new edition could find an American audience and , if so, what changes would be required to make such an edition a success.
- Design of Reinforced Concrete, McCormac, Jack, 4th Edition, Addison Wesley Longman, 1998. I performed a review of this text in December of 1996.
- Structural Concrete: Theory and Design, by Hasson, Addison Wesley

Longman, 1998. I performed a review of this text in March of 1996.

- Structural Analysis, by D. Dadeppo, Harper-Collins Publishers. In June 1994, I reviewed a draft copy of the proposed text and made recommendations as to its merits for publication.
- Design of Reinforced Concrete, McCormac, Jack, 3rd Edition, Harper-Collins Publishers, 1993. I performed a review of this text in December 1990.

From 1990 to 1994, I performed numerous consulting jobs for the High Power Mountain Corporation. These jobs include:

- the repair recommendations to a retaining wall and approach slab of a 250 ton truck scale,
- the inspection of repairs to the fire damage of the Clean Loadout Facility and conveyor truss support system,
- the repair recommendations to damaged support beams in the Refuse Bin,
- the design of an extension to an existing concrete retaining wall,
- the structural evaluation of a slab for a sludge containment facility,
- the repair designs of grating support beams in a coal bin hopper, a support bent for a coal conveyor belt, and a support column for a light-frame loadout facility, and
- the structural inspection of a support truss to a coal conveyor belt system that had been repaired, but previously damaged in an accident.

Through the Technical Assistance Center, I performed the structural analysis and evaluation of a grappling hook that had marketing potential for a local manufacturer. In addition, I performed the structural analysis of both a 6 ton and a 9 ton three-axle trailer for a local trailer manufacturer.

In the summer of 1989, I worked in field construction as a Senior Engineer for Bechtel National, Inc., at the Savannah River Facility near Aiken, South Carolina.

On a full-time basis from 1979 to 1987 for Bechtel National, Inc., I provided technical expertise and consulting services in the areas of stress, finite element, seismic and dynamic analyses; analyzed and designed several complex buildings and structural systems; and contributed to proposal development. Partial details of the work performed during this time period is described in Section I.I (Non-teaching work experience).

D. **Publications:**

1. *"Structural Capability to Accommodate Fault Displacement,"* Leftwich, S. D., DeGabriele, C. D., and Wu, C. L., Document No. R212S110, Bechtel National, Inc., April 1987.
2. *"Wind Tunnel Testing and the SAB Design,"* Leftwich, S. D., et al, presented at

the 1984 ASCE Convention, San Francisco, CA.

3. *"Elastic Stress Analysis of General Prismatic Beams,"* Leftwich, S. D., and Barton, F. W., VHTRC 81-R26, Virginia Highway and Transportation Research Council, 1980.
4. *"Elastic Stress Analysis of General Prismatic Beams,"* Leftwich, S. D., Ph.D. dissertation, University of Virginia, January 1980.
5. *"Stress Analysis of the Haunch Region in a Rigid-Frame Bridge,"* Leftwich, S. D., and Barton, F. W., Transportation Research Record 676, Bridge Design, Evaluation, and Repair, Washington, D.C. 1978, pp. 19-26.
6. *"Stress Analysis of the Haunch Region in a Rigid Frame Bridge,"* paper presented at the Transportation Research Board Annual Meeting, Washington, D.C., January 1978.
7. *"Stress Analysis of the Haunch Region in a Rigid Frame Highway Bridge,"* Leftwich, S. D., and Barton, F. W., Technical Report No. VHTRC 78-R8, Virginia Highway and Transportation Research Council, August 1977.
8. *"Stress Analysis of the Haunch Region in a Rigid Frame Highway Bridge,"* Leftwich, S. D., M.S. thesis, University of Virginia, May 1977.

Author or co-author of the following Bechtel reports:

9. *"Integrated Structure Designs for Photovoltaic Arrays,"* SAND81-7191, work performed for Sandia National Laboratories, Bechtel Group, Inc., Research & Engineering, April 1983.
10. *"STS Shuttle Assembly Building,"* Vandenberg AFB, CA, Concept Design Report, prepared for US Army Corps of Engineers, Bechtel National, Inc., May 14, 1982.

11. *"Photovoltaic Subsystem Optimization and Design Tradeoff Study,"* work prepared for Sandia National Laboratories, Bechtel Group Inc., Research & Engineering, March 1981.
12. *"Development of Structural Concepts for the Unified Heliostat Array,"* prepared for VEDA Incorporated, Bechtel National, Inc., August 1980.

E. Research:

1. Projects:

"Effect of Repeated Heat-Straightening on Behavior of Impacted Highway Bridge Steel Girders," by Dr. Wael Zatar (Co-PI) and Dr. Steven Leftwich (PI), WVDOH, $119,966 total funding, July 1, 2005 thru August 15, 2007.

Throughout my industrial experience, I have performed research in several areas of civil engineering as reflected in the above references. Since joining the WVU Tech faculty in August 1987, I have directed research projects for 3 graduate students

that include (1) the structural analysis and evaluation of the designs of one, two, and three-axle utility trailers; (2) the preliminary structural design of a single-story masonry building with a steel-joist roof system; and (3) the evaluation of the effectiveness of several lateral load resistive systems in steel high-rise buildings.

I received the First Award, Structural Division, of the James F. Lincoln Arc Welding Design Competition, 1977, for my research on the stress analysis of the launch region of a rigid frame highway bridge.

2. **Grants**: – Nick J. Rahall, II Appalachian Transportation Institute (ATI) Grant Coordinator. Approximately $61,000 in grant money awarded annually to the Civil Engineering Department for faculty development, student activities, and scholarships.

F. Licensing:
California #33797 (Civil Engineering)
West Virginia #10504 (Professional Engineer)
West Virginia #1127 (Professional Land Surveyor)

G. Seminars conducted: -

August 2006 – I conducted a faculty workshop on graduation checks for department chairs.
October 2005 - I taught a condensed 4-hour Professional Engineering Review session in structural steel design, reinforced concrete design, and structural analysis for the ASCE Younger Members Forum in Charleston, WV.

I helped organize and host six "*Engineered Wood Systems: Contemporary Construction Applications*" Seminars that were held from 1989 through 2000 at WVU Tech. These seminars were sponsored by cooperating timber associations and were well attended by professionals as well as students.

I also participated in the 1988 WVIT ASCE Fall Technical Conference as the keynote dinner speaker.

I was speaker for three Bechtel in-house technical seminars. Topics included the wind design for the Shuttle Assembly Building and the theoretical background and use of finite-element analysis in engineering practice.

H. Inventions, copyrights, etc: None

IV. Service

A. Committee assignments:

1. Committees on which you presently serve:
   - Institutional Academic Affairs Committee
   - Ad Hoc Committee of Finances- Faculty Assembly Subcommittee

2. Summary of activity level:
   - Institutional Academic Affairs Committee – active member who has attended two/three meetings held during 2011.
   - Ad Hoc Committee of Finances- Faculty Assembly Subcommittee – the committee was recently formed. The first meeting should be in January 2012.

B. Offices held in professional societies – None

C. Student recruitment:

- As a faculty advisor for Civil Engineering students, I meet and advise both current civil engineering students as well as potential students entering into the engineering program. In addition, I make personal phone calls to high school seniors who express an interest in engineering.
- Fall 2011 – I participated in the Blue and Gold Open House.
- Summer 2011 – I participated in Camp Stem at WVU Tech. Camp Stem is a workshop for upcoming high school students to get them interested in the math and sciences.

D**. Special assignments:**

- Campus Coordinator for the Nick J. Rahall, II Transportation Institute (RTI) - I plan and oversee approximately a $55,000 total annual budget (from September 2006 to June 2012) used to provide matching monies for student scholarships, research, faculty development, student participations in conferences.
- Tech Coordinator for the recent WVU/WVU Tech 2+2 B.S. degree in mining and the 4+1 WVU/WVU Tech B.S. degree in Civil Engineering and B.S. in Mining Engineering programs.
- August 2005 to December 2009 - WVU Tech Civil Engineering Coordinator for the "Marshall Plan", an agreement between WVU Tech, Marshall University, and West Virginia University to offer Tech's Civil Engineering degree on the Marshall campus. In this capacity, I plan and help schedule Tech's CE courses for the Marshall program. In addition, as Chair of Civil Engineering, I oversee the quality of the courses at Marshall and Tech to ensure that all ABET criteria is achieved for this program. I perform at least two graduation checks for seniors in this program. Approximately 22 students graduated with BSCE degrees from this program.

- July 2007 – I set up several new computers in the ASCE student lounge.
- January thru December 2002 - I set up several new computers, printers, and scanners in the Civil Engineering computer labs. In addition, I provided software and hardware maintenance on all the CE computers on a year-round basis.
- January thru April 2002 - Due to the lack of a permanent department secretary, I kept track of the Civil Engineering budget.
- January thru February 2002 - I taught the structural analysis and design portion of the PE review for Marshall University Graduate College in Charleston, WV.
- January 2002 - I helped the new chair of the department, Dr. Finnie, on several activities that normally begin during a new semester. These activities included the assignment of graders, tracking purchase orders issued during the previous semester, and several budget issues.
- January 2002 - I taught the first four weeks of the CVLE-453 Civil Engineering Projects on project management for Mr. Paul Ghosh, the adjunct professor for that class who was out-of-town during that time.
- February 2002 – I participated in a panel discussion concerning stroboscopic methods using in engineering during the Harold Edgerton Exhibit held at the Hurricane Community Museum.

E. Sponsorship of student organizations:

I am the Chief Faculty Advisor for Tau Beta Pi from 1987- present. In this capacity, I obtain student GPAs and evaluate their qualifications to be inducted into Tau Beta Pi. In addition, I oversee the induction process of new student members, maintain finances, and help submit reports to national headquarters.

F. Administrative duties:

- Chair of Civil Engineering, Fall 2005-present, duties include:
  - ABET Coordinator for the Civil Engineering Program. I directly supervise all faculty teaching the mechanics courses (MAE 241 Statics, MAE 242 Dynamics, MAE 243 Mechanics of Materials, and MAE 331 Fluid Mechanics), ENGR 402 Fundamentals of Engineering Review, and all civil engineering (CE) courses. In addition, I perform activities required for ABET accreditation which include:
    - conducting, collecting, and assimilating data from alumni, employer, and student surveys.
    - collecting data of student the pass rates on the Fundamental of Engineering (FE) Exam.
    - collecting, assimilating, summarizing, and presenting assessment

data of course learning and Civil Engineering Program outcomes, particularly from the ClassAct software described below.

- updating and developing the Civil Engineering Department website which included the Civil Engineering Program goals and learning outcomes, the Civil Engineering Program educational objectives, curriculum, course descriptions, and faculty and staff professional data.

- Completing immigration documentation for H1-B and permanent residence application of international faculty.
- Since fall 2007, I had the faculty use the ClassAct software, an assessment program developed at Texas A & M University-Corpus Christi. The ClassAct software relates the learning outcomes of the courses to the program outcomes. At the end of each academic year, I collect the software files from each faculty member and enter those files into a master program to evaluate percent achievement of our Civil Engineering Program Outcomes**.** The Civil Engineering Department continues to use the same software for all future assessment cycles.
- supervise and evaluate faculty performance each semester through in-class visitations, student evaluations and feedback, and research/scholarship in their areas of expertise,
- advise students and perform two graduation checks for each senior,
- evaluate student course transcripts for transfer credit,
- oversee the department budget and Tech Foundation accounts,
- report department activities and chair meetings each semester with the Civil Engineering Advisory Committee.

- Tech Civil Engineering Coordinator for the "Marshall Plan" –Fall 2005 to December 2009
- RTI Campus Coordinator – Fall 2005-June 2012
- Interim Chair of Civil Engineering Fall 2004 – Spring 2005
- Interim Chair of Civil Engineering Fall 2001
- Acting Chair of Civil Engineering for 1998-1999

G. Community service: - None