CURRICULUM VITAE for Monte B. Boisen, Jr.

EDUCATION

A.A., Mathematics, Foothill College, 1964 B.A., Mathematics, San Jose State University, 1966 M.A., Mathematics, University of Nebraska, 1968 Ph.D., Mathematics, University of Nebraska, 1970

EMPLOYMENT

Computer analyst - Computer Usage Corporation, Stanford Industrial Park, Palo Alto, California. Summer 1966
Graduate Teaching Assistant - University of Nebraska, Lincoln, Nebraska. (1966-1970)
Assistant Professor - Virginia Tech, Blacksburg, Virginia. (1970-1978)
Associate Professor - Virginia Tech, Blacksburg, Virginia. (1978-1989)

Professor - Virginia Tech, Blacksburg, Virginia (1989-2001)

Professor and Chair of Department of Mathematics, Moscow, Idaho (2001-present

HONORS AND AWARDS

NDEA Graduate Fellowship 1968.

Candy Fellowship (annual award presented by the faculty of the Mathematics Department at the University of Nebraska to their most promising graduate student) 1969.

Received 4 certi⁻cates of teaching excellence at Virginia Tech (1976,1977,1980,1987)

Member of the Academy of Faculty Service at Virginia Tech (1981-1984, 1998-present)

1989 Wine Award winner for excellence in teaching at Virginia Tech

Member of the Academy of Teaching Excellence at Virginia Tech (1989-present)

The Favorite Teacher of the Year Award 1994 (elected by the undergraduate Mathematics Majors)

One of two university nominees for the national CASE Professor of the year award 1994 Research Associate, University of California, Berkeley Spring 1996

One of three university nominees for the national CASE Professor of the year award 1998 and 1999

College of Arts and Sciences Diversity Award 1998

Xcaliber award for contributions to the application of technology to teaching 1999

Invited Visiting Professor at the University of Kyoto for the Fall semester 2000 Diggs Teaching Scholar 2001

PROFESSIONAL ORGANIZATIONS AND ACTIVITIES

Member of the Mathematical Association of America (joined 1965).

Member of the American Geophysical Union (joined 1989).

Member of the Mineralogical Society of America (joined 1992).

Member of the Society for Industrial and Applied Mathematics (joined 1991).

- I have written reviews for the Mathematical Reviews and have refereed articles for journals including The Paci⁻c Journal of Mathematics, Glasnik Matematicki, The American Mineralogist, Physics and Chemistry of Minerals and Acta Cryst.
- Together with G. V. Gibbs, we gave a short course entitled \Mathematical Crystallography" at the 1985 meeting of the Mineralogical Society of America.
- Together with Michael Hochella organized a symposium in honor of G.V. Gibbs at the national American Geophysical Union meeting in San Francisco 1999. The symposium included approximately 50 presentations by scientists from all over the world.

PUBLICATIONS

Articles (refereed) in journals and books:

- 1. Boisen, Jr., Monte B. (1969) Overlays of Pascal's triangle, Fibonacci quarterly, 7, 131-139.
- 2. Boisen, Jr., Monte B. and Max D. Larsen (1972) Präfer and valuation rings with zero divisors, Paci⁻c J. Math., 40, 7-12.
- 3. Boisen, Jr., Monte B. and Max D. Larsen (1973) On Präfer rings as images of Präfer domains, Proc. Amer. Math. Soc., 40, 87-90.
- 4. Boisen, Jr., Monte B. (1973) The containment property for large quotient rings, J. reine angew. Math., 258, 55-61.
- 5. Boisen, Jr., Monte B. and Max D. Larsen (1973) Transforms of ideals in a commutative ring, J. reine angew. Math., 258, 186-191.
- 6. Boisen, Jr., Monte B. and Philip B. Sheldon (1974) The valuation structure of homomorphic images of Präfer domains, Proc. Amer. Math. Soc., 46, 335-342.
- 7. Boisen, Jr., Monte B. and Philip B. Sheldon (1975) Pre-Präßer rings, Paci⁻c J. Math., 58, 331-344.
- 8. Boisen, Jr., Monte B. (1975) A note on a characterization of principal ideal domains, Proc. Japan Acad., 51, 526-527.
- 9. Schlenker, John L., G. V. Gibbs and Monte B. Boisen, Jr. (1975) Thermal expansion coe±cients for monoclinic crystals: a phenomenological approach, Amer. Mineralogist, 60, 828-833.
- 10. Boisen, Jr., Monte B. and G. V. Gibbs (1976) A derivation of the 32 crystallographic point groups using elementary group theory, Amer. Mineralogist, 61, 145-165.
- 11. Boisen, Jr., M.B. and P. B. Sheldon (1976) A note on pre-arithmetical rings, Acta. Math., 28, 257-259.
- 12. Boisen, Jr., Monte B. and Philip B. Sheldon (1977) CPI-extensions: overrings of integral domains with special prime spectrums, Can. J. Math., 29, 722-737.

- 13. Boisen, Jr., Monte B. (1977) The adjunction of antiidentity operations to point groups, including a derivation of the magnetic point groups, Zeitschrift für Kristallographie, 145, 197-215.
- 14. Boisen, Jr., Monte B. and G. V. Gibbs (1978) A method for constructing and interpreting matrix representations of space group operations, Canadian Mineralogist, 16, 293-300.
- 15. Schlenker, John L., G. V. Gibbs and Monte B. Boisen, Jr. (1978) Strain-tensor components expressed in terms of lattice parameters, Acta. Cryst., A34, 52-54.
- 16. Arnold, J.T. and M. B. Boisen, Jr. (1979) Abnormalities in Noetherian rings, Proc. of the Amer. Math. Soc., 73, 1-6.
- 17. Arnold, J.T. and M. B. Boisen, Jr. (1981) Simple going down and going down, Houston J. Math., 7, 455-465.
- 18. Zhang, Z.G., M. B. Boisen, Jr., L. W. Finger and G. V. Gibbs (1985) Molecular mimicry of the geometry and charge density distribution of polyanions in borate minerals, Amer. Mineralogist, 70, 1238-1247.
- 19. Gibbs, G.V. and M. B. Boisen, Jr. (1986) Molecular mimicry of structure and electron density distributions in minerals, Materials Research Society Symposia Proceedings, 73, 515-527.
- 20. Boisen, Jr., M.B. and G. V. Gibbs (1987) A method for calculating fractional s-character for bonds of tetrahedral oxyanions in Crystals, Physics and Chemistry of Minerals, 14, 373-376.
- 21. Gibbs, G.V., Philippe D'Arco, M. B. Boisen, Jr. (1987) Molecular mimicry of bond length and angle variations in germanate and thiogermanate crystals: A comparison with variations calculated for C-, Si- and Sn- containing oxide and sul⁻de molecules, J. Phys. Chemistry, 91, 5347-5354.
- 22. Gibbs, G.V., L. W. Finger and M. B. Boisen, Jr. (1987) Molecular mimicry of the bond length-bond strength variations in oxide crystals, Physics and Chemistry of Minerals, 14, 327-331.
- 23. Boisen, Jr., M.B. and G. V. Gibbs (1988) MATOP: an interactive FORTRAN 77 program for solving problems in geometrical crystallography, Computers and Geosciences, 14, 37-53.
- 24. Boisen, Jr., M.B., G. V. Gibbs and Z. G. Zhang (1988) Resonance bond numbers: A graphtheoretic study of bond length variations in silicate crystals. Physics and Chemistry of Minerals, 15, 409-415.
- 25. Gibbs, G. V., M. B. Boisen, Jr., R. T. Downs and A. C. Lasaga, Mathematical modeling of the structures and bulk moduli of TX_2 quartz and cristobalite structure-types, T = C, Si, Ge and X = O,S. Materials Research Society Symposia Proceedings, 121 (1988), 155-166.
- 26. Bartelmehs, Kurt Lane, G. V. Gibbs and M. B. Boisen, Jr. (1989) Bond length and bonded radii variations in sul⁻de molecules and crystals containing main group elements: a comparison with oxides, Amer. Mineralogist, 74, 620-626.
- 27. Beattie, C.A., M. B. Boisen, Jr. and L. W. Johnson (1989) Inertia-preserving secant updates, J. of Optimization Theory and Applications, 62, 1-16.
- 28. Boisen, M. B., Jr., G. V. Gibbs and H. Wondratschek (1990) Derivation of the Normalizers of the Space Groups, Acta Cryst. A46 545-552.
- 29. Boisen, M. B., Jr., G. V. Gibbs, R. T. Downs and P. D'Arco (1990) The dependence of the SiO bond length on structural parameters in coesite, the silica polymorphs and the clathrasils, American Mineralogist, 75,748-754.
- 30. Downs, R. T., G. V. Gibbs and M. B. Boisen, Jr. (1991) A study of the mean-square

displacement amplitudes of Si, AI, O atoms in framework structures: Evidence for rigid bonds, order, twinning and stacking faults. Amer. Mineralogist, 75,1253-1267.

- 31. Boisen, M.B. Jr., G. V. Gibbs and Z.G. Zhang (1992) An Application of Graph Theory to the Estimation of Bond Numbers in Crystals. Computers Math. Applic., 23,99-102.
- 32. Downs, R.T., G.V. Gibbs, K.L. Bartelmehs and M. B. Boisen, Jr. (1992) Variations of Bond Lengths and Volumes of Silicate Tetrahedra with Temperature. American Mineralogist, 77, 751-757.
- Gibbs, G. V., M. A. Spackman and M.B. Boisen, Jr. (1992) Bonded and Promolecule Radii for Molecules and Crystals. 77, 741-750.
- 34. Buterakos, L.A., G. V. Gibbs and M. B. Boisen, Jr. (1992) Bond Length Variation in Hydronitride Molecules and Nitride Crystals. Physics and Chemistry of Minerals, 19, 127-132.
- 35. Boisen, M.B. and G.V. Gibbs (1993) A Modeling of the Structure and Compressibility of Quartz with a Molecular Potential and Its Transferability to Cristobalite and Coesite. Physics and Chemistry of Minerals, 20, 123-135.
- 36. Downs, R.T., K.L. Bartelmehs, G.V. Gibbs and M.B. Boisen, Jr. (1993) Interactive Software for Calculating and Displaying X-ray or Neutron Powder Di®ractometer Patterns of Crystalline Materials. American Mineralogist, 78, 1104-1107.
- Baldwin, T.L., L. Mili, M.B. Boisen, Jr. and R. Adapa (1993) Power system observability with minimal phasor measurement placement. IEEE Transactions on Power Systems, 8, 707-715
- Feth, S., G.V. Gibbs, M. B. Boisen, Jr., and R.H. Meyers (1993) Promolecule Radii for Nitrides, Oxides, and Sul⁻des. A Comparison with E[®]ective Ionic and Crystal Radii. The Journal of Physical Chemistry, Vol 97, No. 44, 11445{11450.
- Hill, F.C., G.V. Gibbs and M.B. Boisen, Jr. (1994) Bond Stretching Force Constants and Compressibilities of Nitride, Oxide, and Sul⁻de Coordination Polyhedra in Molecules and Crystals (1994) Structural Chemistry Volume 5, Number 6, 349{354
- 40. Nicoll, J. S., G.V. Gibbs, M. B. Boisen, Jr., R. T. Downs and K. L. Bartelmehs (1994)Bond Length and Radii Variations in Flouride and Oxide Molecules and Crystals. Physics and Chemistry of Minerals, 20, 617{624.
- 41. Boisen, M.B. Jr, G.V. Gibbs and M.S.T. Bukowinski (1994) Framework Silica Structures Generated Using Simulated Annealing with a Potential Energy Function Based on and H₆Si₂O₇ Molecule. Physics and Chemistry of Minerals, 21, 269-284.
- 42. Gibbs, G.V., J.W. Downs and M.B. Boisen, Jr. (1994) The Elusive SiO Bond in SILICA: Physical Behavior, Geochemistry and Materials Applications, REVIEWS IN MINERAL-OGY, Vol. 29, Eds. Heaney, P.J., Prewitt, C.T. and Gibbs, G.V., 331{368.
- 43. Teter, D.M., Gibbs, G.V., Boisen, Jr. M.B., Allan, D.C. and Teter M.P. (1995) First{ Principles study of several hypothetical silica framework structures. Physical Review B, 52, 8064{8073
- 44. Bartelmehs, K.L., Downs, R.T., Gibbs, G.V., Boisen, M.B. and Birch, J.B. (1995) Tetrahedral rigid{body motion in silicates, Amer. Mineral., 80, 680{690.
- 45. Hill, F.C, G.V. Gibbs and M.B. Boisen, Jr., (1997) Critical point properties of electron density distributions for oxide molecules containing rst and second row cations. Phys Chem Min Vol 24, pp 582-596.
- 46. Gibbs, G.V., O. Tamada and M.B. Boisen, Jr. (1997) Atomic and ionic radii: a comparison

with radii derived from electron density distributions, Phys Chem Min, Vol 24, pp 432-439.

- 47. Gibbs, G.V., F.C. Hill and M.B. Boisen, Jr.(1997) The SiO bond and electron density distributions, Phys Chem Min., Vol 24, pp 167-178. Also appears in Modelling of Minerals and Silicated Structures, B. Silvi and Ph. D'Arco, John Wiley and sons.
- 48. Feth, S., G.V. Gibbs, M.B. Boisen, Jr. and F.C. Hill, (1998) A study of the bonded interactions in nitride molecules in terms of bond critical point properties and relative electronegatives, Phys. Chem. Minerals Vol. 25, pp. 234-241.
- 49. Sueno, S. S. Matsuura, G.V. Gibbs and M.B. Boisen, Jr. (1998) a crystal chemical study of protoanthophyllite: orthoamphiboles with the protoamphibole structure, Phys. Chem. Minerals Vol. 25, pp. 366-377.
- 50. Gibbs, G.V., M.B. Boisen, F.C. Hill O. Tamada and R.T. Downs, (1998) SiO and GeO bonded interactions as inferred from the bond critical point properties of electron density distributions. Phys Chem. Minerals Vol. 25, pp. 574-584.
- 51. Gibbs, G.V., F.C. Hill, M.B. Boisen, R.T. Downs, (1998) Power law relationships between bond length, bond strength and electron density distributions. Phys Chem. Minerals Vol 25, pp. 585-590.
- 52. Gibbs, G.V., M.B. Boisen, Jr. (1998) A modeling of the bonded interactions of crystalline silica, Chapter 2, The Chemistry of organic silicon compounds, Vol. 2, editors Z. Rappoport and Y. Apeloig, Wiley, New York, pp. 103-118.
- 53. Gibbs, G.V., K.M. Rosso, D.M. Teter, M.B. Boisen, M.S.T. Bukowinski (1999) Model structures and properties of the electron density distribution for low quartz at pressure: a study of the SiO bond, Journal of Molecular Structure, Vol. 486: pp. 13-25.
- 54. Boisen M.B., G.V. Gibbs, M. O'Kee[®]e, K.L. Bartelmehs (1999) A generation of framework structures for the tectosilicates using a molecular-based potential energy function and simulated annealing strategies, Micropor Mesopor Mat Vol. 29, pp. 219-266.
- 55. Rosso K.M., G.V. Gibbs GV and M.B. Boisen (1999) SiO bonded interactions in coesite: a comparison of crystalline, molecular and experimental electron density distributions, Phys. Chem. Miner. Vol.26 pp. 264-272.
- 56. Gibbs G.V., O. Tamada, M.B. Boisen and F.C. Hill (1999) Laplacian and bond critical point properties of the electron density distributions of sul⁻de bonds: A comparison with oxide bonds, Am. Mineral. Vol. 84 pp. 435-446.
- 57. Gibbs, G.V., M.B. Boisen, Jr., F. C. Hill and O. Tamada (2000) Search for a connection among bond strength, bond length, and electron density distribution, in Physics meets mineralogy-Condensed matter Physics in Geosciences, Eds. Aoki, H., Syono, Y., and Hemley, R. J., Cambridge University Press, Cambridge England pp. 83-94.
- 58. Gibbs, G.V., F.C. Hill, M.B. Boisen and R.T. Downs (2000) Molecules as a basis for modeling the force ⁻eld of silica, in Structure and imperfections in amorphous and crystalline silicon dioxide. Eds. Devine, R.A.B, Duraud, J.P. and Dooryhee, E. John Wiley and Son, Ltd. London, England. pp. 153-165.
- 59. Gibbs GV, Hill FC, Boisen MB, Downs RT (2000), Power law relationships between bond length, bond strength and electron density distribution, Physics and Chemistry of Minerals, 25, 585-590
- 60. Gibbs GV, Boisen MB, Rosso KM, Teter DM, Bukowinski MST (2000), Model structures and electron density distributions of the silica polymorph coesite at pressure: An assessment of OO bonded interactions, J. Phys. Chem. B 104: 10534-10542.

Books Published:

- 1. Boisen, Jr., Monte B. and Max D. Larsen (1978), Understanding Basic Calculus: with applications from the managerial, social and life sciences. Charles E. Merrill Pub. Co., 438pp.
- 2. Boisen, Jr., M.B. and G. V. Gibbs (1985), Mathematical Crystallography. Reviews in Mineralogy Vol. 15, Mineralogical Soc. of America, 406pp. (Revised Edition, 460pp (1990))
- 3. Burgmeier, James W., Monte B. Boisen, Jr. and Max D. Larsen, Calculus with applications. McGraw-Hill, New York, New York (1990), 607pp.
- 4. Burgmeier, James W., Monte B. Boisen, Jr. and Max D. Larsen, Brief Calculus with applications, McGraw-Hill, New York, New York (1990), 428pp.

Theses and dissertations directed:

- 1. Barber, W., Function Minimization by Simulated Annealing, Honors Dissertation. 1990
- 2. Downs, R. T., Librational displacements of silicate tetrahedra in response to temperature and pressure, PhD Dissertation. 1992 (directed jointly with G. V. Gibbs)
- 3. Bartelmehs, K.L. Modeling the properties of slicates, PhD Dissertation. 1993 (directed jointly with G. V. Gibbs)
- 4. J.S. Nicoll, Bond length and radii variations in °ouride and oxide molecules and crystals, MS Thesis. 1993 (directed jointly with G. V. Gibbs)
- 5. Brown, S.A., The response of polyhedra in close packed structures to temperature and pressure, MS thesis. 1993 (directed jointly with G. V. Gibbs)
- 6. Zhao, Hui, Calculation of elastic constants of crystals as a function of pressure with applications to quartz and cristobalite, MS thesis, 1994 (directed jointly with G. V. Gibbs)
- 7. 5 Master's presentations directed (1997-1999)
- Beverly, Lesa, \The Creation of Algorithms Designed for Analyzing Periodic Surfaces of Crystals and Mineralogically Important Sites in Molecular Models of Crystals: Understanding the Electron Density Function Through Visual Examinations of the Curvature and Shape of the Equi-Value Laplacian Surfaces." PhD dissertation. 2000

Book Review:

My review of Space Groups and Lattice Complexes by Werner Fischer, Hans Burzla[®], Erwin Hellner, and J. D. H. Donnay; National Bureau of Standards Monograph 134. U. S. Government Printing O±ce appeared in the American Mineralogist 60 (1975), p 742.

GRANTS

- G.V. Gibbs and I were co-principal investigators on a 5-year (1988-1993) \$625,000 (plus approximately \$150,000 in computing funds) NSF grant entitled \Mathematical modeling of silicates and sul⁻des: A study of structural principles, equation of state and reactions."
- G.V. Gibbs and I were co-principal investigators on a \$240,000 NSF two year grant (1993-1995) grant entitled \Strategies using mathematical models to generate silica and AIPO₄{ zeolite structure types and to identify features in the electron density distribution that relate to the forces acting within the silica polymorphs"
- G.V. Gibbs and I received a \$15,000 supplement to our 1993-1995 NSF grant described

above.

- G.V. Gibbs and I are co-principal investigators on a four year (1996-2000) \$340,000 NSF grant entitled \The generation of structures and properties of stable and metastable phases for geologically important chemical systems."
- Received a small (\$1500) grant for the Minority Student Organization that I was in the process of founding (1995)
- Received an \$8000 grant from the College of Arts and Sciences diversity program to provide support for the minority student program that I founded in the department.
- Received a \$300 grant in support of teaching development activities by the CEUT (1997).
- Received a \$10000 grant in support of projects for the Minority Mathematicians at Virginia Tech Club and other diversity activities awarded by the College Diversity Committee (1999).

ICT supplemental grant of \$850.00 to support travel abroad (1998).

G.V. Gibbs and I are co-principal investigators on a four year (2000-2003) \$180,000 NSF grant entitled \A Study of Bonded Interactions, Crystal Chemistry, Transformation of Chemical Reactivity of Earth Materials Based on Electron Density Distributions"

DIVERSITY ACTIVITIES

- Departmental coordinator of minority recruiting and a®airs (for undergraduates and graduate students)(1994-2001)
- Founded the club for African American Mathematicians (originally called the Minority Math Club-currently called the \Association of African American Mathematicians at Virginia Tech" (AAAMVT)) in 1995.
- 1995-2001 Acted as mentor and faculty advisor for the AAAMVT club as well as organized and conducted club trip to Northern Virginia (1996 and 1997), Atlanta (1998) and Charlotte (1999)
- 2000 Obtained funding for and oversaw arrangements for a conference in Richmond designed for students from a number of the HBCU institutions in our region hosted by the AAAMVT.
- 1999-2001 Mentor and advisor for the GANN graduate student program with Virginia State University.
- 1998-2000 Coordinator for the Mathematics Department's involvement in the Minority Summer Intern Program.
- 2000 Panelist for a University diversity forum
- 1999 Took two students to North Carolina A&T to attend Math Awareness Day there. They both gave talks that I helped them prepare. One of them won the prize for giving the best talk of the day.
- Member of the Virginia State Quality Education for Minorities Initiative (1994-2001)
- Group leader of a Virginia Tech Outreach Project to Schools project bring Mathematics and Science enrichment to the children in Lincoln Terrace Elementary School (1995)
- 1982 As President of the Faculty Senate I formulated a series of A±rmative Action initiatives based on a report of an ad hoc Committee on A±rmative Action and led the Senate in passing them.

RECENT TEACHING RELATED ACTIVITIES

- 1998 Several talks about the Emporium some given on campus, some given in places such as New Orleans (ITCTM conference), England (Lilly Conference) and Northern Virginia
- 1998 Member of the university ⁻rst year teachers group (to study issues surrounding the freshman experience) Co-chaired the technology subcommittee.
- 1999 Talk at AAHE National Conference on Higher Education: Organizing for Learning: Constant Values, Competitive Contexts held at Washington, D.C. Title of talk: Math Emporium. Presenters: R.F. Olin, M.B. Boisen, C.A. Beattie, K.H. Hannsgen, L. Scruggs and A. Moore.
- 1999 Talk at The Annual Conference of the Washington Center for Improving the Quality of Undergraduate Education and FIPSE Learning Communities Dissemination Project: Transforming Campuses Through Learning Communities. Held in Seattle Washington May of 1999. Title of talk and panel discussion: Learning Communities Concepts as a Lens to View the University: "Blurring the De⁻nitions and Exploring the Boundaries. Presenters were Ronald Daniel, Monte Boisen and Terry Wildman.
- 1999 Talk at Project Kaleidoscope 10th Anniversary Meeting: Celebrating and Anticipating A Decade of Reform. Held at the University of Maryland in October 1999. Presentation and workshop entitled "Using the Web and Other Technologies to Create and Sustain Active Learning: Two Case Studies" The presenters were Gregor Novak, R. F. Olin and M.B. Boisen. We made a 45 minute presentation and then conducted a workshop that lasted approximately 2 hours.

2000 Invited to the University of Idaho to help them set up a version of the Math Emporium.

- 2000 The Lilly foundation invited me to facilitate an all day workshop on enhancing the transition students make from High School to university science and math courses as part of their Project SEAM activities.
- Boisen, Monte, (2000) "The Math Emporium," Teaching with Technology, David Brown editor, Anker Press, Bolton, Mass. pp. 47-50

INSTITUTIONAL SERVICE

University Level Service

Positions held:

Secretary of the Faculty Senate (1979-80)

Chair, Faculty Senate ad hoc committee on the revision of the Faculty Senate Constitution (1980-1981)

Chair, Faculty Senate ad hoc fringe bene⁻ts committee (1980-1981)

President of the Faculty Senate (1981-2)

Chairperson, Faculty Senate ad hoc committee on a±rmative action (1981-2)

Chairperson, Faculty Senate Credentials and Elections Committee (1982-3)

Co-chairperson, Subcommittee on enrollments of the University Task Force on planning (1989)

Chairperson, Academy of Teaching Excellence Workshop on Dossier Format (1991-1992)

Chairperson, University Wine Award Selection Committee (1993-1994)

Chairperson, Ad Hoc Faculty Committee to Review the College of Education Restructuring

Plan (1994)

Secretary, Academy of Teaching Excellence (1992-1995)

Chair {elect, Academy of Teaching Excellence (1995-1996)

Chair, Academy of Teaching Excellence (1996-1997)

Past Chair, Academy of Teaching Excellence (1997-1998)

Coordinator for the University evaluation of the University Honors Program and its Director. (1996-1997)

Chairperson for the University evaluation of ICAM (1997-1999)

Committee service:

Faculty Senate (1978-1983)

University Fringe Bene⁻ts Committee (1979-1980)

University Council (1980-1981)

Search Committee for the Vice-President for administration and Operations (1980-1981)

University ad hoc Committee on the revisions of the University Council Constitution (1980-1981)

Long term Disability Oversight Committee (1985-2001)

Faculty Subcommittee of the University Self Study (1986-1987)

President's Roundtable (1987-2001)

ad hoc committee on the evaluation of faculty e®ort in extension and service (1988)

Academy of Teaching Excellence Dossier Format Committee (1991-1992)

SHEV Awards Committee (1990-1992)

Academy of Teaching Excellence (1989-1995)

Goldwater selection committee (1991-1992,1994)

President's Scholarship awards selection committee (1991-1992)

Wine Award Selection Committee (1989, 1992, 1993)

Search Committee for the Dean of the College of Arts and Sciences (1993)

Academic advisory board to the Service Learning initiative (1994-1995)

Advisory board to the Center of Excellence in Undergraduate Teaching (1995{2001)

Search committee for the Associate Provost for Academic A®airs (1996-1997)

Member of the faculty/sta[®] subcommittee for the University 10 year Self Study (1997-1998) Member of the University cross-cutting initiative on Learning Communities (1998-2001) Member of the University appeals committee (1999-2001)

College Level Service

Positions held:

Chairperson, College of Arts and Sciences Committee on Teaching Excellence (1990-1991) Chairperson, College of Arts and Sciences service subcommittee of the College Chairperson, College of Arts and Sciences Wine Award Selection Committee (1993)

Committee service:

College of Arts and Sciences teaching excellence committee (1988-1990) Nominations Committee (1989-1991)

College of Arts and Sciences service subcommittee of the College Planning Committee (1990-1993)

College of Arts and Sciences Planning Steering Committee (1991-1993)

College of Arts and Sciences Wine Award Committee (1990-1993)

College of Arts and Sciences Scholarship and Awards Committee (1990-1994)

College of Arts and Sciences ad hoc SHEV Awards Committee (1990-1991) College of Arts and Sciences Promotion and Tenure Committee (1998-2000) College of Arts and Sciences faculty rewards Committee (1999-2001)

Departmental Level Service

Positions held:

Chairman, Extension committee (1979-1995)
Departmental coordinator of minority recruiting and a®airs (for undergraduates and graduate students) (1994-2000)
Mentor (to GTA's and Instructors) (1989-1995)(1997-2000)
Leader of the Math 1015 initiative.(1997-1999)
Chair, Teaching Committee (1996-1999)
Coordinator of Minority a®airs

Committee service

Library Committee (1971-1972) Math-Ed Committee (1972-1976) Undergraduate Program Committee (1976-1982) Service Committee (1976-1980,1988-1990) Program Advisory Committee (1978-1981) Graduate Admissions Committee (1978-1979) Teaching Evaluation Committee (1980-1981,1982-1983) Personnel Committee (1982-1983,1990-1993) Search committee (1988-1990) Upper Division Service Committee (1990-1995) Computing Committee (1993-1995) Governance Committee (1993-1997) Instructor A®airs Committee (1994-1995) Graduate Advisor(1994-1998) Applied Discrete Mathematics Option Committee (1993-1997)

MENTORING AND OUTREACH ACTIVITIES

Mathematics Department GTA Committee (1989-93)
Mathematics Department Graduate Teaching Certi⁻cation Panel (1994-1995)
Member of a Mathematics Department Teaching Trio (faculty mentoring program) 1992-1993, 1994-1995)
Mathematics Department Graduate Teaching Certi⁻cation Panel (1994-1995)
A plenary speaker at the University GTA Workshop (1992-1995)
A member of the advisory committee for an NSF project to integrate Math and Science with Vocational Technical Education in the middle school curriculum (1993-1995)
Mentor (to GTA's and Instructors in the Mathematics Department) (1989-1997)

SELECTED INVITED TALKS

An analysis of the OO interactions in coesite: to bond or not to bond, Boisen, Monte (2000) University of Kyoto 2000

On the Nature of Bonding in Silicates: Why do Ionic Models Work so Well? (M.S.T. Bukowinski (presenter), M.B. Boisen, and J.W. Downs) Invited talk given at the 1999 National Meeting of the American Geophysical Union in San Francisco.

Electron Density Distributions and Bonded Interactions Calculated for Earth Materials (G.V. Gibbs (presenter), K.M. Rosso and M.B. Boisen) Invited talk given at the 1999 National Meeting of the American Geophysical Union in San Francisco.

Boisen, M.B. Jr., Simulated Annealing and Minimization Techniques with applications to power systems. Given to the American Electric Power Company and the Ohio State University Department of Electrical Engineering (two presentations) May 13, 1993

Boisen, M.B. Jr. and G.V. Gibbs, The generation of silica structures using simulated annealing. Gordon Research Conference on Zeolitic and Layered Materials (presented by both authors) May 23, 1993

Boisen, M. B., Jr. (the presenter) and G. V. Gibbs Ab initio based models of the structural and volume compressibility properties of silica polymorphs such as quartz, cristobalite and coesite (invited talk at the V. M. Goldschmidt conference held at Reston Virginia May 1992.)

Gibbs, G. V. (Presenter), M. B. Boisen, Jr. Bond length {bond strength variations for nitride, oxide, °ouride and sul⁻de molecules and crystals (invited talk at the V. M. Goldschmidt conference held at Reston Virginia May 1992.)

Gibbs, G. V.(Presenter), M.A. Spackman and M. B. Boisen, Jr. Systematic Variations in bonded radii and promolecules radii for crystals and molecules, Invited Address to the Seventeenth Meeting of the Society of Crystallographers in Australia, Armidale, NSW, 1991.

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