**Teacher and Professional Education Faculty**

**Required Vita Format\***

Directions: Be certain to only include information that is relevant to your current education position. List information in reverse chronological order.The bulleted subsections are optional.

**Name Iraj Kalantari**

**Department Mathematics**

**Rank Chair/Professor**

**Education**

1976: Ph.D., Mathematics, Cornell University

Field: Mathematical Logic, Recursion Theory

1973: M. S., Applied Mathematics, Cornell University

1970: B. S., Mathematics and Physics, University of Wisconsin, River Falls

**Employment/Experience**

(List the employer and dates for each of the following areas)

* **University Teaching** (include courses taught with title & number)

1986‑present Professor, Western Illinois University

1981‑1986 Associate Professor, Western Illinois University

1979 (Summer) Visiting Assistant Professor, Department of Computer

Science, University of Nebraska at Lincoln

1978‑1981 Assistant Professor, Western Illinois University

1976‑1978 Post‑Doctoral Lecturer, University of California at

Santa Barbara

1975‑1976 Lecturer, Cornell University

(Summers)

* + **Public School Teaching** (required information)
  + **Professional**

1999 – present Chair, Mathematics Department (WIU)

1982‑1985 Assistant to the Chair, Mathematics Department

(WIU)

1981 Reviewer for Mathematical Reviews

1980 Editor, RECURSIVE FUNCTION THEORY

NEWSLETTER

(Distributed worldwide; circulation 500+)

1980 Associate Editor, PENTAGON

Referee for Annals of Pure and Applied Logic

Referee for Australian Journal of Mathematics

Referee for Journal of Symbolic Logic

* + **Research**

Consulting:

1977‑1978 Consultant to Ecosciences Division of Henningson, Richardson, and Durham at Santa Barbara, California: A search firm in

environmental studies. (The study was for the government and on

the MX project. The papers 3) ‑ 7), under the Publication heading

were written for them and the work is classified).

**Publications/Scholarly/Creative Activities**

* **Refereed**

1) (Joint with B. Kalantari) A Linear Time Algorithm for

Minimum Cost Flow on Undirected One‑Trees,

(To Appear).

2) (Joint with R.G. McDonald) A Data Structure and an

Algorithm for the Nearest Point Problem. IEEE

Transactions on Software Engineering, Vol. SE‑9, No. 5,

pp. 631‑634.

3) (Joint with R. Downey) Effective Extensions of Linear

Forms on a Recursive Vector Space over a Recursive Field

(to appear in the Zeiteechrift fur Mathematische Logic und

Grundlagen der Mathematik).

4) (Joint with G. Weitkamp) Effective Topological Spaces III:

Forcing and Definability, Annals of Pure and Applied

Logic 36 (1987), pp. 17‑27.

5) (Joint with G. Weitkamp) Effective Topological Spaces II:

A Hierarchy, Annals of Pure and Applied Logic 29

(1985), pp. 207‑224.

6) (Joint with G. Weitkamp) Effective Topological Spaces I:

A Definability Theory, Annals of Pure and Applied Logic 29

(1985, pp 1‑27.

7) (Joint with C. Joekuseh) Recursively Enumerable Sets and

the van der Waerden's theories on Arithmetic Progressions,

Pacific Journal of Mathematics, Vol. 115, No. l, 1984.

8) Major Subsets in Effective Topology, Patras Logic

Symposium, North Holland 1982, pp. 77‑94.

9) (Joint with J. Remmel) Degrees of Recursively Enumerable

Open Subsets in Recursive Topology. Journal of Symbolic

Logic, Vol. 48, No. 3, pp. 610‑622.

10) (Joint with A. Leggett) Maximality in Effective Topology.

Journal of Symbolic Logic, Vol. 48, No. l, pp. 100‑112.

11) (Joint with A. Leggett) Simplicity in Effective Topology,

Journal of Symbolic Logic, Vol. 47, No. l, pp. 169‑183.

12) Recursively Enumerable Convex Sets, Part l: Effective

Version of a Theorem of Stone; appeared in "Aspects of

Effective Algebra" edited by John N. Crossley (1981),

pp. 128‑146.

13) (Joint with A. Retzlaff) Recursive Constructions in

Topological Spaces. Journal of Symbolic Logic, Vol. 44,

No. 3, pp. 96‑112 (1979).

14) Automorphisms of the Lattice of Recursively Enumerable

Vector Spaces: Zeitschrift fur Mathematische Logic und

Grundlagen der Mathematik, 25, S.385‑410 (1979)

15) Major Subspaces of Recursively Enumberably Vector

Spaces,Journal of Symbolic Logic, Vol. 43, No. 2, pp.

293‑303 (1978).

16) A New Approach to Decision Making via the Theory of

Fuzzy Sets, Technical Report ‑ ETS‑044 (1978).

17) On the Determination of the Shape of the Relative

Acceptability, Technical Report ‑ MX‑HDRS (1978).

18) On the Determination of the Shape of the Relative

Acceptability Curve and Bracketing Technique, Technical

Report ‑ MX‑HDRS (1978).

19) Relative Acceptability and Systematic Ranking Method,

Technical Report ‑ MX‑SRM (1977).

20) Multistage Decision Models in a Fuzzy Environment,

Technical Report ‑ MX‑HDRS (1977).

21) (Joint with A. Retzlaff) Maximal Vector Spaces Under

Automorphisms of the Lattice of Recursively Enumerable

Vector Spaces, Journal of Symbolic Logic, Vol. 42, No. 2,

September 1977.

22) Structural Properties of the Lattice of Recursively

Enumerable Vector Spaces, Ph.D. Dissertation, Cornell

University, Aug. 1976.

BOOK:

(Special volume of Recursive Function Theory Newsletter)

"Extended Abstracts of Short Talks of the 1982 Summer

Institute on Recursion Theory" edited by Iraj Kalantari.

WORK IN PROGRESS:

(with Jeff Remmel) On the Nature and the number of

Automorphisms of the Lattice of Recursively Enumerable

Open Sets (Forthcoming.)

(with Galen Weitkamp) Separation Theorems (In Progress).

(with Larry Welch) Recursiveness in Point Free Topology

(This work is developing into a large body of results.

We suspect that there will be material for two or three

papers).

OTHER PROJECTS:

The writing of a textbook for undergraduates in

mathematics (which prepares them to understand and do

proofs) is another long‑term project.

* **Non-refereed**

**Conference Presentations**

* **Refereed**

Talks and Lectures: (Excluding several Seminars and Colloquia at WIU)

April 1988 "Form vs. Content," Illinois Chapter Conference of AMA,

Bradley University (Invited).

April 1987 "Points in a Point‑Free Space," Cambridge Logic

Conference, MIT, Boston.

October 1986 "That it is not that it is not, is not that it is."

Sigma Xi: Researcher of the Year Award Lecture.

April 1986 "Recursiveness and van der Waerden's Theorem on

Arithmetic Progressions," Invited address at

University of Iowa, Iowa City.

April 1983 "Recursively Enumerable Sets and van der Waerden's

Theorem," Cambridge Logic Conference, MIT, Boston.

July 1982 "On Effective Topological Spaces," Invited address at the

A.M.S. Summer Institute in Logic, Cornell University.

June 1982 "Effective Topology," Colloquium Series, University of

Melbourne.

June 1982 "Capturing Recursive Points," same as above.

June 1982 “Effective Topology: A Hierarchy," same as above.

June 1982 "Effective Topology: Definability and Forcing," same as

above.

June 1982 "Effective Topology: A Definability Theory",

Monash University Logic Colloquium.

Aug. 1980 "Effective Topology". Invited address at the

International Summer Meeting of Association for Symbolic

Logic, at Patras, Greece.

July 1980 "Lattice of Recursively Enumerable Open Sets", Logic

Colloquium, Cornell University.

Jan. 1980 "Lattice of Recursively Enulmerable Open Sets", Logic

Seminar, University of California at San Diego.

August 1979 Received an invitation to give a one hour address at the

Special Summer meeting of logicians at Monosh University,

Melbourne Australia. However, I was unable to attend

this meeting due to passport problems. Nevertheless, a

paper of mine has appeared in the proceedings of the said

meeting.

July 1979 Algorithms of Recursion Theory in Mathematics ,"

Computer Science Colloquium, University of Nebraska,

Lincoln.

Oct. 1978 "Recursive Topology," Logic Colloquium, University of

Illinois, Urbana‑Champaign.

June‑July 1978 "Mathematics of Decision Making", Parts I‑III, to

scientists of Ecosciences of Henningson, Durham and

Richardson.

June 1978 "Recursive Convexity", Colloquium Series, University of

California, Santa Barbara.

May 1978 "Recursion Theory and Vector Algebra", California State

College at San Bernardino.

May 1978 "Recursion Theory and Topological Vector Spaces,"

Colloquium Series, Western Illinois University.

April 1978 "From Godel to Paris", Saginaw Valley State College.

April 1978 "Recursion Theory and Linear Topological Vector Spaces,"

invited lecture at a Session of AMS and ASL National

Meeting, Houston, Texas.

Jan. 1978 "Recursive Construction in Topology," Colloquium Series,

University of California, Santa Barbara.

Jan. 1978 "Recursive Construction in Topology," Parts I‑III Logic

Seminar, Cornell University.

Oct. ‑ Dec. 1977 "Mathematics of Fuzzy Sets and Multivalued Logic," Parts

I‑V, to Scientists of Ecosciences of Henningson, Durham,

and Richardson.

Jan. ‑ Feb. 1977 "Priority Methods in Recursion Theory", Parts I, II &

II, Computer Science Seminar, University of California,

Santa Barbara.

October 1976 "Recursion Theory and Algebra", Colloquim Series,

University of California, Santa Barbara.

August 1976 "Structural Properties of the Lattice of Recursively

Enumerable Vector Spaces". Contributed Lecture of the

80th Annual Summer Meeting of the American

Mathematical Society of Toronto, Canada.

July 1976 "Automorphisms of the Lattice of Recursively

Enumerable Vector Spaces", Logic Seminar, Cornell

University.

April 1976 "Structural Properties of the Lattice of Recursively

Enumerable Vector Spaces", Logic Seminar, Cornell

University.

* **Non-refereed**

**Professional and Academic Service**

* + **National**
  + **Regional**
  + **University**

**College:** Faculty Council, Honors Council, Sabbatical Leave Committee,

Interdisciplinary Studies Board, College Award‑Winners Selection,

Dean Search Committee

**University:** Honors Council, President's High‑Tech Committee, Major

Acquisition for Library Committee, Faculty Mentor, Annual

Lecturer Selection Committee

Programs and Courses Developed:

1984 (Spring) Developed (with help from logicians) and offered a senior course in Mathematical Logic.

1983 (Summer) Developed and offered a graduate course in Ramsey Theory.

1981 (Spring & Fall) Developed a course for students in the honors program

(General Honors 303).

1981 (Spring) Developed and offered a seminar course for graduate students in mathematics (Math 597). Almost every graduate student in mathematics at WIU took the course.

1980 (Spring & Fall) Developed a course "General Honors 153" for gifted high

school students.

1980 (Spring) Developed a course "Graph Theory and Some Applications" at Western Illinois University.

1979 (Fall) Developed a course "Epoch Making Theorems of Mathematics" at Western Illinois University.

1979 (Summer) Developed two courses (i) Design Analysis of Algorithms; (ii) Operations Research at the University of Nebraska, Lincoln.

1979 (Spring) Developed a course "Theory of Computation" at Western Illinois University.

1976‑1977 Director of a self‑paced calculus course at University of California at Santa Barbara.

Helped to develop a teacher training workshop for new teaching assistants.

1973‑1974 Research Assistant in development of a Keller‑style\self‑paced calculus course and modules for it at Cornell University.

* + **Department**

Chair 1999-present

Assistant to the Chairperson 1982‑1985

Advisory Council 1979‑1988

Chair, Graduate Committee 1982‑1986

Chair, Colloquium Committee 1982, 83, 85, 86, 88

Other Committee Memberships: Personnel Committee, Advising and Placement Committee, Ad Hoc Committee to Study Student Evaluations, Grade Appeals Committee, Honors Committee, Lower Division Curriculum Committee, Advisor to K.M.E.

* + **Community**

**Grants and Special Awards**

**Professional Memberships/Affiliations**

1978 Mathematical Association of America

1974 Association of Symbolic Logic

1973 American Mathematical Society

\*Adapted from the WIU Graduate Faculty Vita format