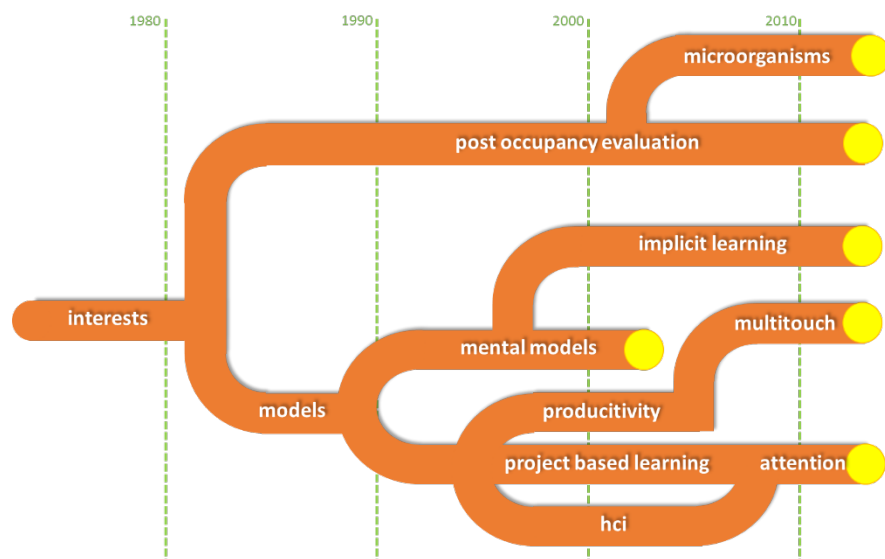

Humberto Cavallin Calanche

Humberto Cavallin teaches courses on design and architectural theory in the School of Architecture at the University of Puerto Rico in Rio Piedras. He received his Architecture Diploma from UNET in Venezuela (1990), MSc in social psychology from the Universidad Central de Venezuela (1997), and PhD (2006) from the University of California, Berkeley. He joined the University of Puerto Rico in 2004, and since then he has been head of both the Undergraduate and Graduate Programs. Dr. Cavallin's research interests include thinking and problem solving, connected to the use of models for simulation and problem solving in design, as well as the study of the impact of tools, communication, and collaboration in the professional practice of design. More recently, Dr. Cavallin has been involved in the development of hardware and software to support the design process, and has collaborated closely on projects leading to a better understanding of the presence of microorganisms in the built environment.

Academic and research interests



| | | | |
|------------------|------|---|-----------------|
| Education | 1990 | Architect (<u>Licensed 1990</u>) 6 years/ Professional degree | UNET, Venezuela |
| | 1997 | Master Sc. Social Psychology | UCV, Venezuela |
| | 2006 | Philosophy Doctor Major: Architecture (Major's GPA 4.0) Minors: Cognitive Science, Social Psychology | UC Berkeley |

Experience
Research

2011-Present Universidad de Puerto Rico

San Juan, PR

Microbes of built environments spanning human urbanization.

This project fills a knowledge gap by studying the environmental microbes in houses in a gradient of acculturation, from remote ancestral lifestyle villages in the Amazon to modern urban houses, and determine microbial transmission between the skin and objects and surfaces of the home. We propose to determine bacterial and fungal taxonomic and metagenomic composition of the surfaces and objects (10 per home) and the skin of the home inhabitants (10 samples) in 10 homes from 4 communities, with different degrees of Westernization, from remote Amerindian villages to urban modern houses in Peru.

(with Prof. Maria Gloria Dominguez Bello, supported by the Alfred P. Sloan Foundation)

2010-Present Universidad de Puerto Rico

San Juan, PR

Development of multi-touch device for designers.

Research and development leading to the development of hardware and software for a multitouch device, to be used as an aid in the development of design projects.

2006-Present Universidad de Puerto Rico

San Juan, PR

Social aspects of remote communication in problems solving in architectural design.

Study of how the technologies for remote communication affect the way in which designers solve problems in architecture, by interacting with other professions in non-collocated modalities.

(Jointly with Prof. Renate Fruchter, Stanford University)

2000-2006

UC Berkeley

Berkeley, CA

2006-Present Universidad de Puerto Rico

San Juan, PR

The role of conceptual structures developed by the use of models in the setting and solving of design problems in architecture.

Study of how models are used for mediating the transmission of implicit knowledge in design, exploring how rules embedded in the generation of objects are perceived and transmitted by means of mere exposure to representations through implicit learning.

2003-2004

UC Berkeley

Berkeley, CA

AutoCAD 2005 Productivity Research

with Prof. W. Mike Martin (Design Process Group / UC Berkeley)

Design and implementation of a research project for evaluating usability and productivity increments produced by the improvements to AutoCAD

included in AutoCAD 2005 financed by a grant of Autodesk Inc. to the University of California at Berkeley.

2002-2003 UC Berkeley Berkeley, CA

AutoCAD Red Deer Productivity Research

with Prof. W. Mike Martin (Design Process Group / UC Berkeley)

Design and implementation of a research project for evaluating usability and productivity increments produced by the improvements to AutoCAD included in AutoCAD Red Deer (commercial name AutoCAD 2004) financed by a grant of Autodesk Inc. to the University of California at Berkeley.

2002 UC Berkeley Berkeley, CA

AEC Case Studies Database

with Prof. W. Mike Martin (Design Process Group/ UC Berkeley) and Ann Heylighen (Katholieke Universiteit Leuven, BE)

Conceptual development of a database for a repository of case studies of AEC practice from the San Francisco Bay Area.

1999-2002 UC Berkeley / Stanford University Berkeley, CA

HCI Evaluation of remote team collaboration

with Prof. W. Mike Martin (Design Process Group / UC Berkeley) and Prof Renate Fruchter (CIFE / Stanford University)

Development of a protocol for collecting and analyzing data about non-located collaborative work over the Internet, as part of the project International Joint Research and Development for Modeling Virtual University, coordinated by Stanford University.

(Through a grant from Obayashi Corporation, Japan)

1999-2002 Universidad Central de Venezuela Caracas, VE

Models of spatial enclosure

with Prof. Isaan Abadi and Luis La Scalea (CEEA / UCV)

Definition of a mathematical model for representing perceived degree of enclosure in architectural spaces, by means of using real scale simulation.

1997-1998 UC Berkeley Berkeley, CA

Mental models and visualization

with Daniel Glaser

Research on the role of the use of metaphors in the understanding of computer graphic interfaces.

1999-2002 Universidad Central de Venezuela Caracas, VE

Habitability in Reduced Spaces Situations

with Prof. Esther Wiesenfeld (IP / UCV) and Prof. Isaac Abadi Abbo (CEEA / UCV)

Study about the processes involved on living in reduced areas housing

projects, aiming to the production of a national law regulating low income small area ratio housing projects.

(Sponsored by the Venezuelan National Council on Housing)

**Academic
Administration**

2004-2012 University of Puerto Rico Rio Piedras, PR

Head of the Undergraduate Program in Environmental Design

Academic administration for the Undergraduate Program in Environmental Design at the University of Puerto Rico, at Rio Piedras.

Head of the Graduate Program in Architecture

Academic administration for the Graduate Program in Architecture at the University of Puerto Rico, at Rio Piedras.

Director of Center for Design Research (CIDI)

Academic administration for the Graduate Program in Architecture at the University of Puerto Rico, at Rio Piedras.

Faculty Committees

- (2011-2012) Comité de Bachillerato
 - (2010) Director del Comité de Diseño
 - (2004-2005 Sem 2). Revisión del Curriculum de la Carrera [Comité Ad-hoc]
 - (2004-2005 Sem 2). Comite Amplio [Comité Facultad] Miembro.
 - (2004-2005 Sem 2). Comite de Maestria [Comité Departamento] Miembro.
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1992-1997 Universidad Central Venezuela

Director of the Spatial Experimentation Laboratory

Administrative and research director of the Laboratory.

**Academic
Teaching**

2004-Present University of Puerto Rico Rio Piedras, PR
Associate Professor /Tenured 2010

▪ **Design Studio**

Brief: The course involves the development of a series of design projects addressing concepts of order, site analysis, scale, structure, rhythm, detail, culture, and landscape.

Instructional design: Three 4 hours studio sessions per week. Project-based learning setting, in between three to four projects per course. Evaluation based on individualized discussion sessions with the students and final submission evaluation at the ending of each project.

▪ **Research Methods**

Brief: This course involves both theoretical and practical knowledge about methods and techniques followed when producing research in

architecture.

Instructional design: one 3 hours session a week. It is a hands-on approach that concludes with the production of a research proposal.

- **Architectural Theory**

Brief: Survey class addressing major theories in architecture during the XXth Century.

Instructional design: one 3 hours session a week. Lectures and discussion in a seminar setting.

2003-2004 UC Berkeley Extension San Francisco, CA

Instructor

- **Design Theory and Process**

Brief: It is a survey course. The emphasis is on the foundations for systematic approaches to design and on providing an overview of these approaches, their ad-vantages and disadvantages.

Instructional design: One lecture, 3-hour per week. Two projects and a take home exam.

1992-2002 Universidad Central de Venezuela Caracas, VE

Associate Professor / Tenured 1994

- **Design Studio**

Brief: Architecture design studio (different levels)

Instructional design: Three 3-hour studio sessions per week. Project-based learning setting, in between three to four projects per course. Evaluation based on individualized discussion sessions with the students and final submission evaluation at the ending of each project.

2001-2002 UC Berkeley Berkeley, CA

Lecturer

- **Architecture 11B / Design Studio**

Semesters: Summer 2001/ Summer 2002

Brief: introduction to design concepts and conventions of graphic representation and model building as related to the study of architecture and landscape architecture. The course involves the development of a series of design projects addressing concepts of order, site analysis, scale, structure, rhythm, detail, culture, and landscape.

Instructional design: Three 1-hour lectures per week, three 3 hours studio sessions per week. Project-based learning setting, in between three to four projects per course. Evaluation based on individualized discussion sessions with the students and final submission evaluation at the ending of each project.

1998-2002 UC Berkeley Berkeley, CA

Graduate Student Instructor

(awarded Outstanding Graduate Student Instructor 1999)

- **Architecture 229G / Building Stories**

Lecturer: Prof. W. Mike Martin

Semesters: Fall 2000, Fall 2001, Fall 2002, Fall 2003

Brief: Seminar on case study methodology, using cases from the San Francisco Bay Area in order to study issues related to project management and design.

Instructional design: One 3-hour lecture per week. Students are assigned cases that they have to develop following a particular management issue related to the project assigned.

(Part of the group that made the instructional design during Summer 2000)

▪ **Architecture 130 / Introduction to Design Theory and Methods**

Lecturer: Prof Jean Pierre Protzen (1999/2000)

Prof. W. Mike Martin (1999/2001)

Lect. Justine Staneko (2002)

Semesters : Spring 1999, Spring 2000, Spring 2001, Spring 2002

Brief: Arch 130 is a survey course. The emphasis is on the foundations for systematic approaches to design and on providing an overview of these approaches, their ad-vantages and disadvantages.

Instructional duty: One 2-hour session once a week.

▪ **Architecture 128 / Professional Internship**

Lecturer: Prof. W. Mike Martin

Semester: Fall 2003

Brief: Professional internship for Architecture Majors in the College of Environmental Design.

Instructional design: One 1-hour meeting once a week.

▪ **Architecture 101 / PBL Design Studio**

(Offered concurrently at Stanford University as Computer Integrated Architecture/Engineering/Construction CE122/222)

Lecturer: Prof. Renate Fruchter

Prof. Mike Martin

Semester: Spring 2000, Spring 2001, Spring 2002, Spring 2003

Brief: Develop a methodology and environment for team approach to A/E/C design by preparing students to understand: the A/E/C global view, cross-disciplinary impacts and integration issues, the use of collaboration technologies, team dynamics and collaborative work, impact of collaboration technologies on organization performance.

Instructional design: Single design project, developed collaboratively in a non-located situation, using digital communicational tools over the internet. One 2-hour meeting per week.

▪ **Environmental Design 11B / Design Studio**

Lecturer: Prof. W. Mike Martin

Prof. Walter Hood

Semester: Spring 2000, Spring 2001, Spring 2002, Spring 2003

Brief: Introduction to design concepts and conventions of graphic representation and model building as related to the study of architecture and landscape architecture. The course involves the development of a series of design projects addressing concepts of order, site analysis, scale, structure, rhythm, detail, culture, and landscape.

Instructional design: Three 3-hour studio sessions per week. Two 1-hour lectures per semester. Project based learning setting, in between three to four projects per course. Evaluation based on individualized discussion sessions with the students and final submission evaluation at the ending of each project.

1990-1992 UNET San Cristóbal, VE
Instructor

▪ **History of Architecture III**

Brief: Course on history of Modern Architecture (19th and 20th Centuries)

Instructional design: One 3-hour lecture per week. As part of the design for the class I encouraged the debate on using diverse historical points of view for presenting the events. The evaluation included two exams (mid term and final), a final paper, and a closing design exercise in which the students were asked to use contents coming from the class as rationale for designing a utilitarian object.

▪ **History of Technology I**

Brief: Course on history of technology applied to architecture using case studies coming from local architecture.

Instructional design: One 3-hour lecture per week. The evaluation included two exams (mid-term and final), and a final research paper studying the use of technology on a local building.

**Professional
Design and
Construction**

1993 (Independent) Caracas, VE
Design Build

- Interior design design/build of office spaces.
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1990-1992 OAC San Cristóbal, VE
Construction Management

- Supervision of building construction for diverse projects for both the private sector and the state government.
 - Building construction and repairs.
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1990-1992 Constructora Cavallin San Cristóbal, VE
Construction Management

- Supervision of land grading, and infra and super structure metal construction of the new Bus Terminal at Rubio, Venezuela.
 - Construction administration for several state funded projects.
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1989-1990 CONCICA San Cristóbal, VE
Construction Management

- Construction administration for several State funded projects.
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Academic
Recent Invited
Lectures
and attended
Conferences

1987-1988 B & G Arquitectura Caracas, VE
Internship
▪ Participation in several architectural design projects developed by the office including the new Palace of Justice, Museum of Beaux Arts, and the redesigning of Bolivar Avenue in Caracas, Venezuela.

2012 University of Colorado Boulder, CO
QIIME / VAMPs Conference

2012 University of Colorado Boulder, CO
Introductory lectures / PBL Course

2012 UAM, Recinto Cuajimalpa México, México
Lecture / Conos de Silencio

2012 UNIBE San Domingo, República Dominicana
Workshop / Research in architectural design
Lecture / Conos de Silencio

2010 University of London London, UK
IX International Workshop on Social Intelligence Design
Member of the Advisory Committee
Presenter/ Paper

2009/2008 Stanford University Palo Alto, CA
Introductory lectures / PBL Course

2008 Universidad de Puerto Rico San Juan, PR
VII International Workshop on Social Intelligence Design
Chair

2008/2007 Royal Danish Academy Copenhagen, Denmark
Workshops on Case Studies in Architecture
Presenter / Paper

2005 Stanford University Palo Alto, CA
IV International Workshop on Social Intelligence Design
Presenter/ Paper

2004 Henry van de Velde Institute Antwerp, Belgium
ADSL Week
Presenter / Lecture and workshop

2000 Worcester, MA
Artificial Intelligence in Design 2000
Presenter / Paper

Academic
Advising

Undergraduate Research
• Tamara Pérez (2012)
Arquitectura efímera en las expresiones festivas en Puerto Rico
(Mentor/ UPR)

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- Luis Daniel Vazquez (2012)
Influencia de la Arquitectura en la generación de actividades vandálicas.
(Mentor/ UPR)

Masters' Thesis

- Desiree Guzman (2007)
Repensar la arquitectura de la exclusión: transformaciones y oportunidades de diseño en el Leprocomio
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Jan Curet (2008)
El videojuego urbano: El atractivo del espacio virtual como estrategia para diseñar y rehabilitar los espacios públicos.
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Mario Navedo (2008)
NECESIDADES FAMILIARES: Diseño de una vivienda multifamiliar adecuada a partir del estudio de diversas estructuras familiares en San Juan.
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Cristina Vasquez (2009)
Determinismo arquitectónico en la vivienda pública en Puerto Rico en la era de Luis Muñoz Marín
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Wilfredo Mendez (2009)
Principios de una cultura biotectónica
(Reader / Master/ Architecture/ UPR)
 - Lisa Ruiz (2009)
**Paredes que no oyen, corazón que no siente
Desarrollo de un Centro Universitario para las Artes Musicales y Escénicas**
(Reader / Master/ Architecture/ UPR)
 - Carlos Gonzalez (2010)
La identidad espacial: constructo entre la reciprocidad del espacio físico y la presencia del individuo.
(Head of the Thesis Committee / Master/ Architecture)
 - Elaine Morales (2010)
Aprender de la Comunidad: Hacia un Nuevo Urbanismo Local
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Gabriel Vazquez (2010)
Percepción estereoscópica en el diseño del hogar en Puerto Rico
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Emmanuel Perez (2011)
Arquitectura Reusada
(Head of the Thesis Committee / Master/ Architecture/ UPR)
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- Karen Cana (2011)
Conciencia local, personalidad universal.
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Nestor Lebron (2012)
El impacto del sincretismo religioso africano como expresión socio-espacial en la vivienda en Puerto Rico.
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Ricardo Curet (2012)
Enfoque en los bordes urbanos: Una interpretación desde al forma urbana
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Luis Alonso (2012)
La arquitectura como un facilitador de la creatividad.
(Head of the Thesis Committee / Master/ Architecture/ UPR)
 - Jennifer Goldfarb (2012)
El tejido de mundillo y su aplicación al diseño paramétrico en arquitectura
(Head of the Thesis Committee / Master/ Architecture/ UPR)

PhD Dissertation

- Alfredo Rivas (2010)
Cyborg óptimo: Una mirada al proceso cognoscitivo de la atención en la era poshumana
(Reader / PhD / Psychology Department/ UPR)

Publishing Editorial

2009

Artificial Intelligence and Society

Guest Editor

2007-2008

Entorno

Journal of the Local Chapter of the Architecture Professional Society
Member of the Editorial Board

Others

2001-2002 UC Berkeley

Berkeley, CA

System administrator

- Provide technical network support for the administrative personal at the College of Environmental Design.
- Produced white paper presenting the scenarios for the deployment of the wireless network at Wurster Hall.

Selected Publications

Cavallin, H. (2012) Argumentos para la transdisciplinariedad desde la perspectiva de la resolución de problemas. Revista Especialidades (Aceptado para publicación)

1. Cavallin, H. (2009). Caliphs, Intentionalities, and the Design Process. *Architecture-Design Methods-Inca Structures. Festschrift for Jean-Pierre Protzen*, 40.
 2. Cavallin, H. (2007). *Shaping memoirs: Intuitions, implicit learning, and architectural design*. University of California, Berkeley.
 3. Cavallin, H., Fruchter, R., & Martin, W. M. (2009). TO SEE OR NOT TO SEE: The role of visibility and awareness in videoconference-mediated teamwork.
 4. Cavallin, H., Fruchter, R., & Nishida, T. (2010). The multiple faces of social intelligence design. *AI & Society*, 25(2), 141–143.
 5. Cavallin, H., Martin, W. M., & Heylighen, A. (2005a). This is not a Caucus race. Or why upgrades in GUIs will (not necessarily) make users (instantly) more productive. *SID2005*.
 6. Cavallin, H., Martin, W. M., & Heylighen, A. (2005b). Mind-ing the Task. The role of context in usability research. *SID2005*.
 7. Cavallin, H., Martin, W. M., & Heylighen, A. (2007). How relative absolute can be: SUMI and the impact of the nature of the task in measuring perceived software usability. *AI & Society*, 22(2), 227–235.
 8. Chairman, G., Nishida, T., Chairs, P., Cavallin, H., Fruchter, R., Board, S., & Rosenberg, D. (2008). The 7th International Workshop on Social Intelligence Design. *AI & Society*, (December).
 9. Fruchter, R., & Cavallin, H. (2011). Attention and Engagement of Remote Team Members in Collaborative Multimedia Environments.
 10. Fruchter, R., & Cavallin, H. E. (2006). Developing methods to understand discourse and workspace in distributed computer-mediated interaction. *AI & Society*, 20(2), 169–188.
 11. Fruchter, R., Cavallin, H., & Martin, W. M. (2000). To See Or Not to See: The Role of Visibility and Awareness in Videoconference-Mediated Teamwork.
 12. Heylighen, A., Cavallin, H., & Bianchin, M. (2006). Reality check. *The Unthinkable Doctorate*, 251–263.
 13. Heylighen, A., Cavallin, H., & Bianchin, M. (2009). Design in Mind. *Design Issues*, 25(1), 94–105.
 14. Heylighen, A., Cavallin, H., & Martin, W. M. (2005). The student, the architect, his intern and her knowledge. *Between Research and Practice, EAAE Transactions on Architectural Education*, (23), 111–119.
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15. Heylighen, A., Martin, W. M., & Cavallin, H. (2005a). How to Teach and Archive Tacit Design Knowledge. *DesignIntelligence*, 11(6).
 16. Heylighen, A., Martin, W. M., & Cavallin, H. (2005b). Knowledge exchange in the wild. *Proceedings of the CIB W096 Architectural Management'Special Meeting'Designing Value: New Directions in Architectural Management*.
 17. Heylighen, A., Martin, W. M., & Cavallin, H. (2007a). Building Stories revisited: Unlocking the knowledge capital of architectural practice. *Architectural Engineering and Design Management*, 3(1), 65–74.
 18. Heylighen, A., Martin, W. M., & Cavallin, H. (2007b). From Practice to PhD. *Emerging Research+ Design, EAAE Transactions on Architectural Education no 32*.
 19. Martin, W M, Heylighen, A., & Cavallin, H. (2003a). Building2 Stories. A hermeneutic approach to studying design practice. *Proceedings of the 5th european academy of design conference, Barcelona, Spain, 28–30*.
 20. Martin, W M, Heylighen, A., & Cavallin, H. (2003b). From repository to resource. Exchanging stories of and for architectural practice. *Proceedings of Social Intelligence Design 2003*.
 21. Martin, W M, Heylighen, A., & Cavallin, H. (2003c). From repository to resource. *Exchanging stories of and for architectural practice, accepted for presentation at SID2003-- Social Intelligence Design, London (UK), 6–8*.
 22. Martin, W M, Heylighen, A., & Cavallin, H. (2005). The right story at the right time. *AI & Society*, 19(1), 34–47.
 23. Martin, W Mike, Fruchter, R., Cavallin, H., & Heylighen, A. (2007). Different by design. *AI EDAM: Artificial Intelligence for Engineering Design, Analysis, and Manufacturing*, (21), 219–225.
 24. Martin, W Mike, Heylighen, A., & Cavallin, H. (2004). From repository to resource: Exchanging stories of and for architectural practice. *Journal of Design Research*, 4(1).
 25. Protzen, J. P., Harris, D., & Cavallin, H. (2000). Limited computation, unlimited design. *Artificial Intelligence in Design'00, Kluwer Academic Publishers, Dordrecht, The Netherlands*, 43–52.

Professional Memberships

- Colegio de Ingenieros de Venezuela (CIV)
(Venezuelan Association of Engineers)
 - Centro de Ingenieros del Estado Táchira (CIET)
-

(Association of Engineers, Táchira State Chapter)

- Colegio de Arquitectos de Venezuela (CAV)
(Venezuelan Association of Architects)
 - Asociación Venezolana de Psicología Social (AVEPSO)
(Venezuelan Association of Social Psychologists)
-