



UVG

UNIVERSIDAD
DEL VALLE
DE GUATEMALA

**RESEARCH
INSTITUTE**

RESEARCH COMPLEMENTS YOUR EDUCATION

OUR GOAL: TO TRANSFORM GUATEMALA



AGRICULTURE AND FOOD

- We work to ensure food security in Guatemala.
- We contribute to rural development.
- We provide solutions to agroindustry.

EDUCATION AND TECHNOLOGY



- We connect Guatemala with the world.
- We lead educational evaluation in Guatemala.
- We teach those who teach.

ENGINEERING AT THE SERVICE OF SOCIETY

We provide creative solutions for the optimal use of our natural resources through studies and projects in energy, water, and the environment.



ENVIRONMENT AND BIODIVERSITY

- We help communities to manage their natural resources.
- We work with governmental institutions to monitor our forests.
- We promote cooperation among communities to rescue Lake Atitlán.
- We describe, investigate, and collect the plants and insects of Guatemala.



BIOTECHNOLOGY

We develop bioproducts and services of genotypification with industrial applications.

We design sustainable biotechnological methods for disease control, agricultural development, and environmental bioremediation.



HEALTH



We have been regional partners of the United States CDC (Center for Disease Control and Prevention) for 35 years.

- We seek to eradicate tropical infectious diseases.
- We work for the prevention of HIV.
- We have a training program in field epidemiology.
- We are pioneers in research ethics when research involves human beings and the use of animals.



ECONOMIC DEVELOPMENT

We seek to provide the government with objective information based on scientific evidence for the creation and implementation of public policy, especially in four areas:



Food and nutritional security.



Agricultural development.



Resilience to climate change and biodiversity conservation.



Competitiveness and a favorable environment for businesses.



HISTORIC AND CULTURAL HERITAGE

We carry out scientific and multidisciplinary archaeology.

We are pioneers in communal archaeology in the Mayan region.

We apply anthropological methodologies in health studies and conflict resolution.

VISION

To be a focal point of excellence in scientific research and technology that promotes scientific thinking in the formation of human resources and contributes to improving the quality of life.

The **Research Institute** of the Universidad del Valle de Guatemala was established in 1977. It is made up of **11 Research Centers** which have generated knowledge and technology for more than **40 years with these main objectives:**

- To seek solutions for national problems and those within our geographic region of influence.
- To propel and strengthen the bond between teaching and research.
- To share our research results with society through publications, conferences, workshops, and ongoing education courses.

The centers collaborate with UVG's Schools, providing laboratories and advanced technology, as well as highly qualified research personnel who also teach. The institution boasts 8 winners of the National Medal of Science and Technology.

Many national and international students carry out their professional internships, complete their theses, and work in our facilities before and after graduation.

Thanks to alliances and international relationships created by our researchers, students have the opportunity to carry out postgraduate studies at prestigious universities and research centers around the world.

MISSION

To carry out research to further knowledge and use it as an educational strategy to promote its transfer and application in the service of mankind.

8 OF THE 20

NATIONAL MEDALS

IN SCIENCE AND TECHNOLOGY WERE AWARDED TO UVG RESEARCHERS

BYRON ARANA, PH.D.
2008

INVESTIGATOR IN THE CENTER FOR HEALTH STUDIES



MARION POPENOE, PH.D.
2012

INVESTIGATOR IN THE CENTER OF ARCHAEOLOGICAL AND ANTHROPOLOGICAL RESEARCH



ELFRIEDE PÖLL, PH.D.
2013

DIRECTOR OF THE HERBARIUM OF THE CENTER FOR ENVIRONMENTAL AND BIODIVERSITY STUDIES



RICARDO BRESSANI, PH.D.
1997

DIRECTOR OF THE CENTER FOR STUDIES IN FOOD SCIENCE AND TECHNOLOGY



CARLOS ROLZ, MSC
2000

DIRECTOR OF THE CENTER FOR BIOCHEMICAL ENGINEERING



JACK SCHUSTER, PH.D.
2015

CO-DIRECTOR OF THE CENTER FOR ENVIRONMENTAL AND BIODIVERSITY STUDIES



CELIA CORDÓN, BS
2006

DIRECTOR OF THE CENTER FOR HEALTH STUDIES



EDWIN CASTELLANOS, PH.D.
2016

CO-DIRECTOR OF THE CENTER FOR ENVIRONMENTAL AND BIODIVERSITY STUDIES





RESEARCH LEADS TO DEVELOPMENT

MAIN RESEARCH AREAS

1. Environment and Biodiversity
2. Agriculture and Food
3. Education and Technology
4. Health
5. Engineering
6. Biotechnology
7. Historic and Cultural Patrimony
8. Economic Development

SERVICES

ENVIRONMENT AND BIODIVERSITY

- **Laboratory services:** analysis of carbon content in soil and plant material (Carbon Laboratory), analysis of satellite images and cartography (GIS Laboratory).
- **UVAL-UVG Herbarium:** plant species determination.
- **Laboratory of Systematic Entomology:** insect species determination.

ENVIRONMENT – LAKE ATITLÁN

- Physicochemical, chemical, and biological analyses of water quality for communities, municipalities, individuals, and institutions in general.

AGRICULTURE AND FOOD

- **Laboratory services:** plant pathology, virology, molecular biology, tissue cultivation, food analysis and labeling, entomology, soil microbiology, and integrated management of plagues.
- Technology consultancy, training and transfer of technology in the agroalimentary and nutritional areas.

EDUCATION

- Evaluation of educational institutions.
- Development of specialized psychometric tests.

HEALTH

- Multidisciplinary field studies and laboratory for infectious human diseases.
- Teaching programs and training in epidemiology, diagnosis, biology, and disease control.

ENGINEERING AND TECHNOLOGY

- Advisory on processes employing microorganisms.
- Advisory on specialized chemical analysis.
- Risk analysis and biosecurity consultancies.
- Development of bioproducts and genotypification services with industrial applications.
- Sale of biodiesel.
- Water analysis and gas combustion analysis.
- Registry of the country code of Top Level Domain (TLD.GT) – <http://www.gt>

ARCHAEOLOGY AND ANTHROPOLOGY

- Laboratory testing of archeological materials.
- Consultancies in the areas of community-business relationships, conflict resolution, and corporate social responsibility.

ECONOMIC DEVELOPMENT

- Analysis of public policies based on scientific evidence.
- Dissemination of knowledge that contributes to the public discussion of subjects relevant to national problems.



UVG IS THE PRIVATE UNIVERSITY
WITH THE **MOST SCIENTIFIC OUTPUT**
IN ALL OF CENTRAL AMERICA.

RESEARCH CENTERS



A multidisciplinary center founded in 2010 in response to the serious flowering of cyanobacterium in Lake Atitlán in 2009.

Coordinates and unifies scientific research of Lake Atitlán, in subjects such as the ecological status of the lake and its basin, as well as the health condition of its inhabitants.

RESEARCH AREAS

- Permanent monitoring and research program on the ecological status of Lake Atitlán and its watershed.
- Environmental education and sustainable development.



ADDITIONAL
INFORMATION ON CEA



Supports the search for solutions in the food and agriculture sectors through the generation of knowledge and new technologies. Promotes rural development without neglecting the environment, biodiversity, and human welfare.

RESEARCH AREAS

- Products for exportation.
- Nutritional and food security.
- Agrobiodiversity and phylogenetic resources.
- Natural resources linked to agriculture.



ADDITIONAL
INFORMATION ON CEA

RESEARCH CENTERS



CEAB seeks solutions to the environmental problems of Guatemala, with an integral and interdisciplinary focus, under a concept of equity and respect for life.

RESEARCH AREAS

- Climate change and monitoring of forest cover, ecosystems, and biodiversity.
- Community management of natural resources.
- Development of environmental institutions.
- Integral watershed management.
- Botanical and biogeographic studies and systematic evolution of arthropods.



ADDITIONAL
INFORMATION ON CEAB



Promotes research and education in biotechnology for the development of bioproducts and of innovative services.

RESEARCH AREAS

- Development of sustainable methods for diseases and vectors control.
- Applied microbiology.
- Biocomputing applied to genetics.



ADDITIONAL
INFORMATION ON CEB

RESEARCH CENTERS



Seeks to improve the health and well-being of the population through knowledge generated in multidisciplinary research and in the strengthening of academic and technical knowledge for the prevention and control of diseases at the national and regional levels, in collaboration with strategic allies.

RESEARCH AREAS

- Parasitic diseases transmitted by insects.
- Environmental health.
- Emerging infectious diseases.
- Prevention of VIH and other diseases.



ADDITIONAL
INFORMATION ON CES



Promotes the application of informatics and communication technology to develop sustainable solutions to power the country's development.

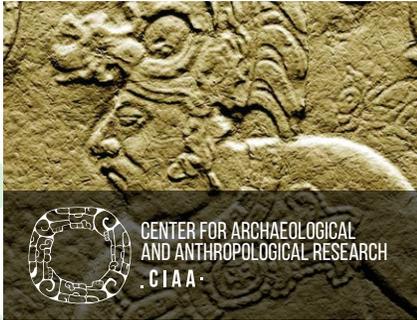
RESEARCH AREAS

- Educational informatics.
- Modeling and simulation.
- Data Science



ADDITIONAL
INFORMATION ON CEIA

RESEARCH CENTERS



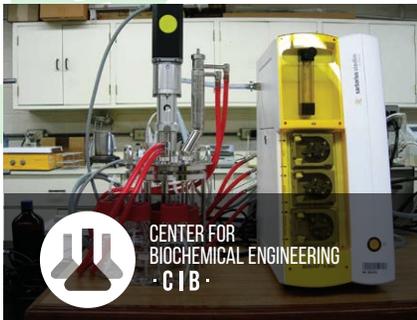
Promotes archaeological and anthropological research in the country through social and cultural research, with an inter- and transdisciplinary focus which offers innovative responses to the demands of society.

RESEARCH AREAS

- Field archaeology.
- Medical and public health anthropology.
- Analysis of materials and archaeometries.
- Ethnohistory.
- Management of cultural patrimony.



ADDITIONAL
INFORMATION ON CIAA



Proposes solutions to optimize production in bioindustry through applied research.

RESEARCH AREAS

- Biofuels.
- Bioproducts.
- Bioprocesses.



ADDITIONAL
INFORMATION ON CIB

RESEARCH CENTERS



Investigates and evaluates school performance with the objective of improving the quality of education in the country.

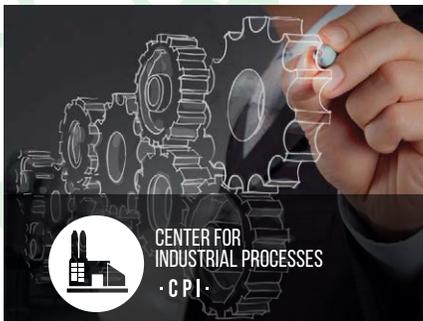
Trains teachers and Human Resources personnel in the use of psychometric tests.

RESEARCH AREAS

- Educational measurement and evaluation.
- Psychometric evaluation for selection of personnel.
- National educational processes improvement.



ADDITIONAL
INFORMATION ON CIE



Develops technological solutions at the industrial level that streamline processes while reducing environmental impact and generating innovative solutions to present-day issues.

RESEARCH AREAS

- Renewable energy.
- Electronics, robotics, and automatization.
- Aerospace engineering.
- Efficiency in industrial processes and cleaner production.



ADDITIONAL
INFORMATION ON CPI

CENTROS DE INVESTIGACIÓN



Proposes public policies based on scientific evidence and promotes the participation of the civil, public, and private sectors, as well as other national actors, so that solutions to national problems can be jointly proposed through four research areas.

RESEARCH AREAS

- Food and nutritional security.
- Agricultural development.
- Environment, resilience to climate change, biodiversity conservation.
- Competitiveness and a favorable environment for businesses.



**ADDITIONAL
INFORMATION ON OES**



DIRECTORY

VICE-RECTORATE FOR RESEARCH, COLLABORATION, AND PARTNERSHIP



Mónica Stein, Ph.D.
Vice-Rector
mstein@uvg.edu.gt



Vanessa Granados, DVM
Director of Strategic Projects
ivgranados@uvg.edu.gt

DEANSHIP OF THE RESEARCH INSTITUTE



Edwin Castellanos, Ph.D.
Dean
ecastell@uvg.edu.gt



Ana Lucía Solano, BS
Secretary
alsolano@uvg.edu.gt

CENTER FOR ATITLÁN STUDIES – CEA



Claudia Romero, Ph.D.
Director
cstromero@uvg.edu.gt

CENTER FOR AGRICULTURAL AND FOOD STUDIES – CEA



Rolando Cifuentes, Ph.D.
Director
rcifuen@uvg.edu.gt

CENTER FOR STUDIES IN APPLIED INFORMATICS – CEIA



Luis Furlán, MA
Director
furlan@uvg.edu.gt

CENTER FOR ENVIRONMENTAL AND BIODIVERSITY STUDIES – CEAB



Gabriela Fuentes, MBA
Director
gmfuentes@uvg.edu.gt

CENTER FOR HEALTH STUDIES – CES



Celia Córdón-Rosales, BS
Director
ccordon@ces.uvg.edu.gt

CENTER FOR STUDIES IN BIOTECHNOLOGY – CEB



Pamela Pennington, Ph.D.
Director
pamelap@uvg.edu.gt

**CENTER FOR ARCHAEOLOGICAL
AND ANTHROPOLOGICAL RESEARCH - CIAA**



Tomás Barrientos, Ph.D.
Director
tbarrientos@uvg.edu.gt

**CENTER FOR BIOCHEMICAL
ENGINEERING – CIB**



Carlos Rolz, MSc
Director
carlosrolz@uvg.edu.gt

**CENTER FOR EDUCATIONAL
RESEARCH – CIE**



Jorge Andrés Gálvez, MA
Director
jagalvez@uvg.edu.gt

**CENTER FOR INDUSTRIAL
PROCESSES – CPI**



Gamaliel Zambrano, MSc
Director
zambrano@uvg.edu.gt

**SUSTAINABLE ECONOMIC
OBSERVATORY -OES**



Sigfrido Lee, MSc
Director
jrlee@uvg.edu.gt



**RESEARCH
INSTITUTE**

**WWW.UVG.EDU.GT/
INSTITUTO-DE-INVESTIGACIONES**
investigacion@uvg.edu.gt



WWW.UVG.EDU.GT/INSTITUTO-DE-INVESTIGACIONES

INVESTIGACION@UVG.EDU.GT

18 AVENIDA 11-95, ZONA 15 VISTA HERMOSA III

GUATEMALA, GUATEMALA 01015

PBX: (502) 2368-8310

INFO@UVG.EDU.GT



YouTube

