

Encuentro Innovación en la construcción

Presentación de:

upna

Universidad Pública de Navarra
Nafarroako Unibertsitate Publikoa



ICONS. CLÚSTER DE LA INDUSTRIALIZACIÓN
DE LA CONSTRUCCIÓN DE NAVARRA

SISTEMA
NAVARRO
DE I+D+i



NAFARROAKO
I+G+b
SISTEMA

ADIttech
COORDINADOR SINAI
Sistema Navarro de I+D+i



Leovímino de Ayala

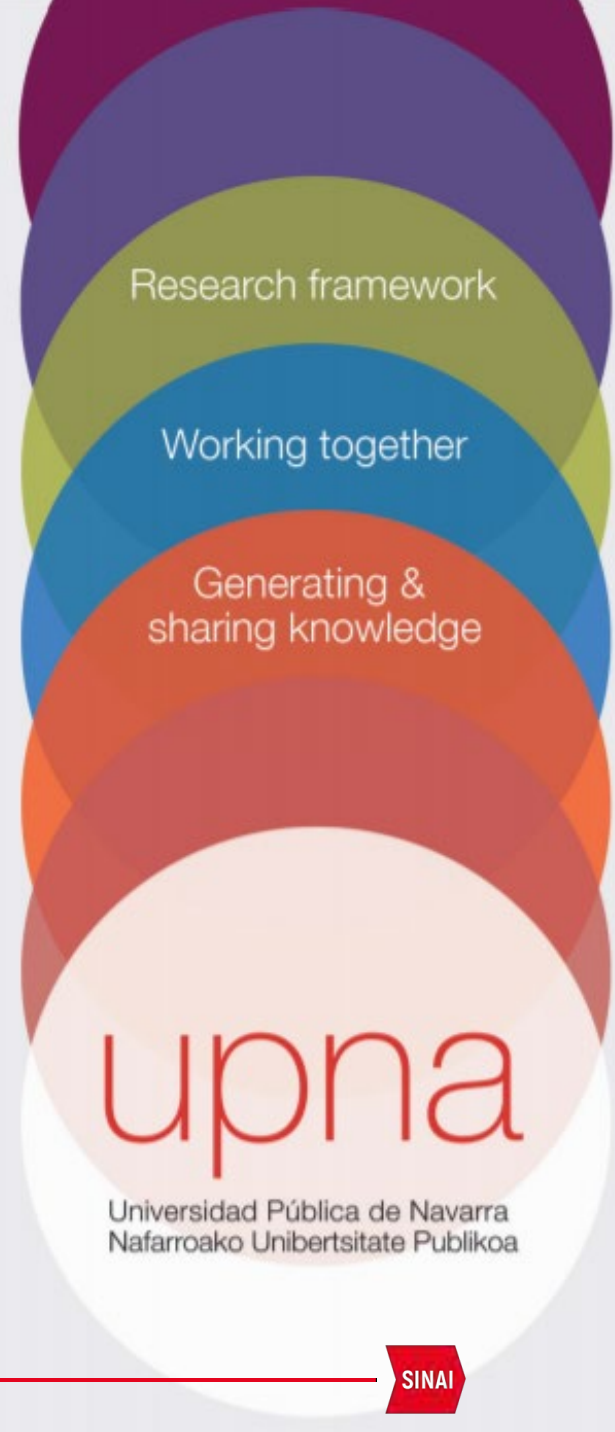
Sede de Institutos de Investigación
Ikerketa Institutuen Egoitza
Research Institutes HQ



Public University of Navarre

Begoña Vicente Yenes – Head of Business Development of Research Institutes
www.unavarra.es/research-institutes

Nafarroako Unibertsitate Publikoa (UPNA)



The Public University of Navarre was set up in 1987 by the Parliament of Navarre.

2 CAMPUSES

ACADEMIC COURSES

- 27 bachelor programmes + 8 double degrees
- 7 International programs
- 33 Master programmes + 5 double Master
- 17 Ph. Degree programmes
- 31 Own degrees



Pamplona
(capital of Navarre)



+ Health Campus



Tudela (2th city of Navarre)

INTERNATIONAL ACTIVITIES

- **+300 bilateral agreements** with international institutions of more than 50 countries
- **+800** mobility students per year
- 26% graduates with mobility experience
- 15% foreign master's students
- 26% foreign PhD students
- **352/1988** subjects in English or French.

HUMAN RESOURCES

- Students: + 10.000
- Teaching staff: + 1.000
- Administration & services staff: + 500
- **Graduates: +40.000**

Labor insertion (Ministry):

- ✓ 1st position in Grade [86.1%]
- ✓ 1st posición in Master degree [84.8%]



ING

School of Agricultural Engineering and Biosciences

Bachelor

- Agricultural, Food and Rural Environment Engineering
- Innovation in Food Processes and Products
- Data Science
- Science
- Biotechnology
- Double Degree in Data Science and Management, Business Administration
- Double Degree in Agricultural, Food and Rural Environment - Engineering & Innovation on Food Processes & Products

Master

- Agricultural Engineering
- Geographic Information Systems and Remote Sensing
- Agrifood Industry Technology and Quality
- Environmental Agrobiology
- Soils & Water Management
- Innovative Oenology
- Synthetic and Industrial Chemistry

ECO

Faculty of Economics and Business Science

Bachelor

- Economics
- International Double Bachelor's degree in Economics, Management and Business Administration
- Double Bachelor's degree in Management, Business Administration and Law (international program)
- Double Degree in Business Administration and Management, and Economics (international programme)
- Double Degree in Data Science and Management, Business Administration

Master

- Master's degree in Business Processes with Enterprise Resource Planning - ERP
- Business Management
- Business Economics, Organisation & Management
- Circular Economy



JUR

Faculty of Law

Bachelor

- Law
- Labour Relations and Human Resources
- Double Degree in Business Adm. and Management, and Law
- International Double Degree in Management, Business Administration and Law

Master

- Access to the Legal Profession
- Occupational Health and Safety
- Private Property Law

HUM

Faculty of Human and Social Sciences

Bachelor

- Infant Education Teaching Qualification
- Primary Education Teaching Qualificación
- International Degree in Primary Education
- Social Work
- Applied Sociology
- History and Heritage
- Double MEI+MEP

Master

- Social Intervention: Individuals, Families and Groups
- Secondary Education Teaching

ING

School of Industrial Engineers and Telecommunications

Bachelor

- Mechanical Engineering
- Electrical and Electronic Engineering
- Engineering in Industrial Technologies
- International Degree in Industrial Engineering
- Engineering in Mechanical Design
- Engineering in Telecommunications Technologies
- Computer Science
- International Degree in Computer Science
- Biomedical Engineering
- Double Degree in Telecommunication Technologies - Engineering and Biomedical Engineering

Master

- Telecommunications Engineering
- Industrial Engineering
- DD Industrial Engineering and Business Management
- Computer Science
- Renewable Energy Engineering
- Biomedical Engineering
- Materials and Manufacturing Engineering
- Computational and Applied Mechanical Engineering
- Project Management
- Math. Modelling, Statistics and Computer -Science

SAN

Faculty of Health Sciences

Bachelor

- Nursing
- Physiotherapy
- Psychology
- Medicine

Master

- Health Promotion & Social Development
- Health Science Research
- Public Health

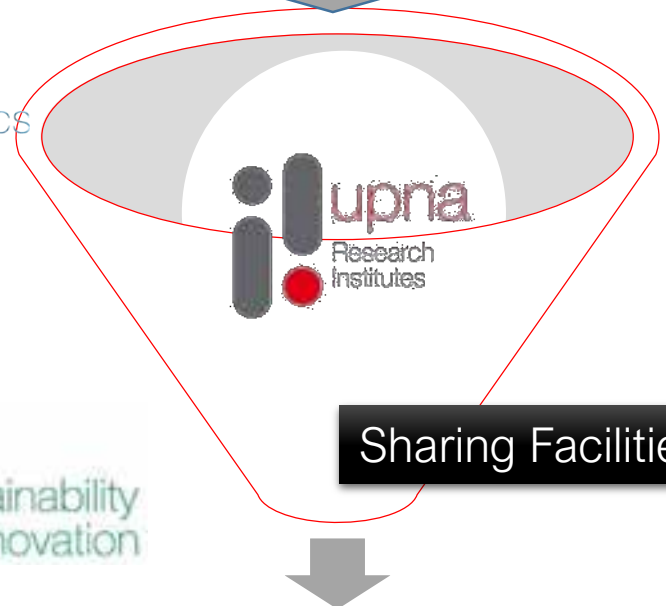
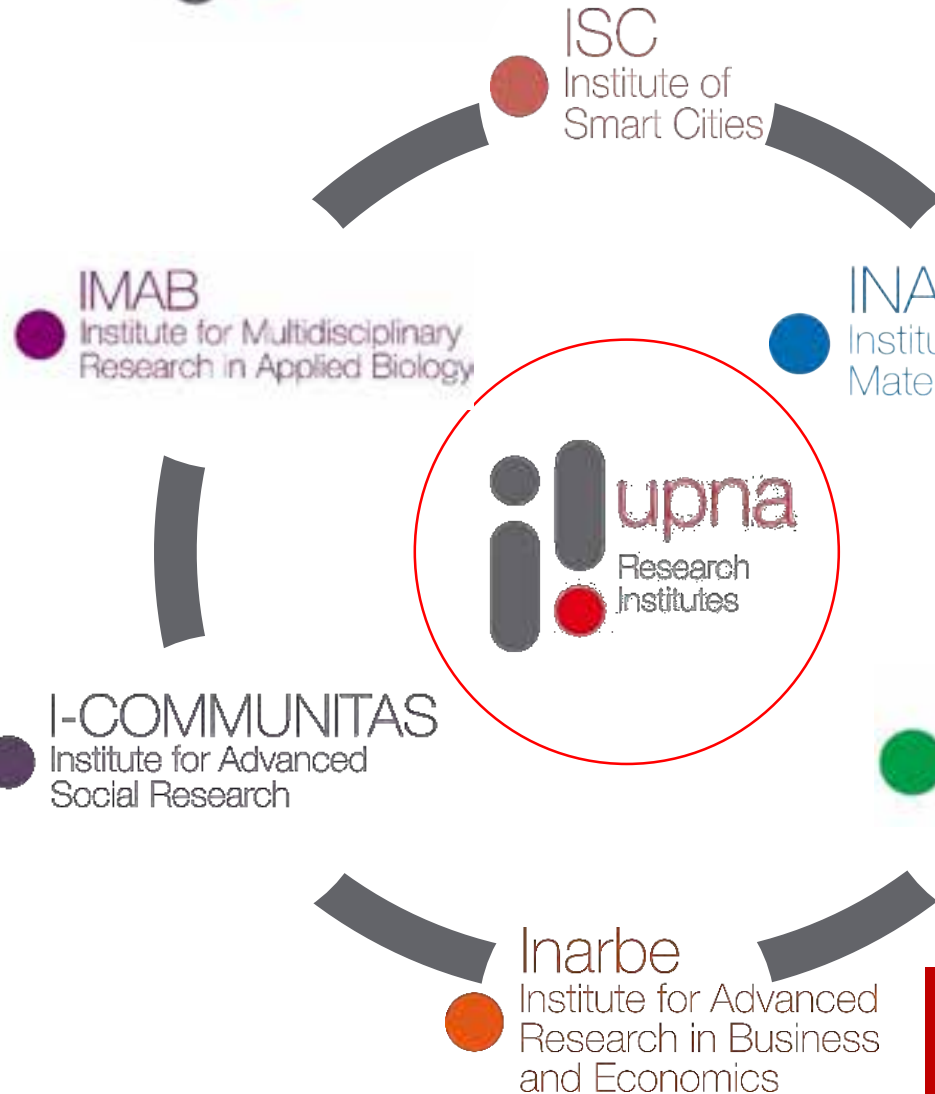


Research activity

Research, Innovation and Knowledge Transfer is based on the foundations of Research Institutes, Research Groups and Collaborative Research Centres

+ 800
Researchers

COLLABORATIVE RESEARCH CENTRES

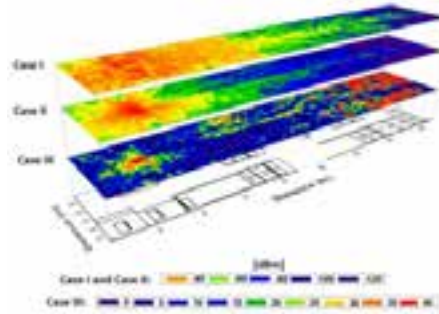


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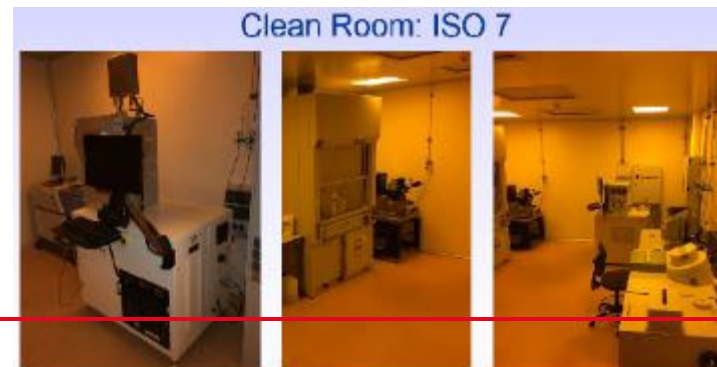
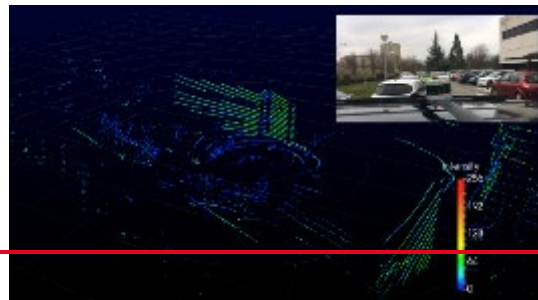
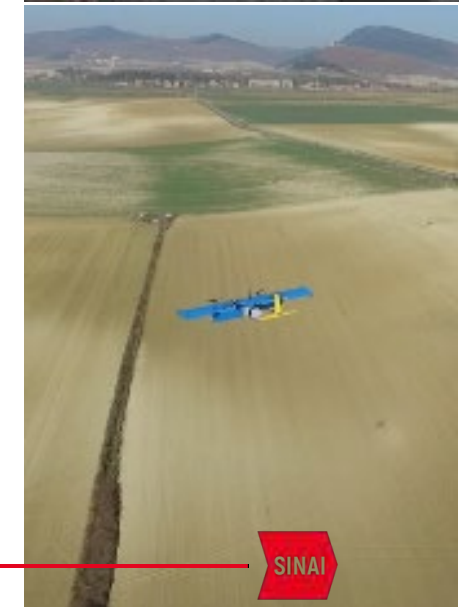
UPNA is ranked the first Spanish university in technology transfer and contribution to the regional development.



Research Institutes Focus

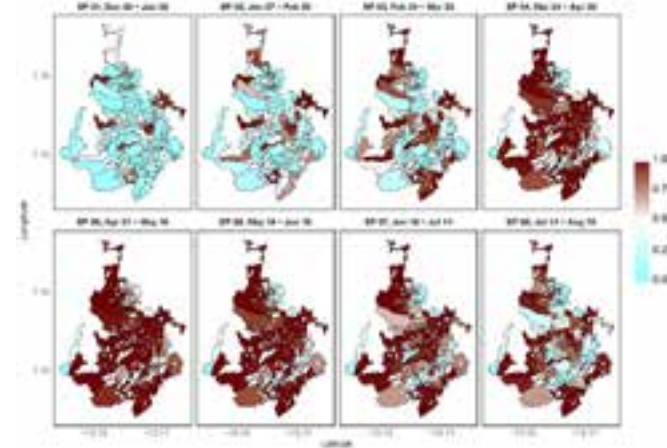


- ✓ **Smart Environments:** The final result of the aforementioned developments. The harmonious combination of ubiquitous and intelligent technology, based on limited resources, with the people and societies that want to use it.
- ✓ **Sustainability and energy efficiency:** Essential to make the above developments viable in the long term without damaging the natural environment on which we depend.
- ✓ **Data analysis and signal processing:** Focused on the analysis and extraction of knowledge from all types of sources through different mathematical and statistical techniques including modelling, simulation, signal processing, data mining, Big Data and Artificial Intelligence.
- ✓ **Internet of Things:** Which seeks to improve the functioning of the cities, factories and homes of the future by using millions of sensors, actuators and devices that communicate with each other and with people to provide a better quality of life to its inhabitants and a more efficient use of all its resources



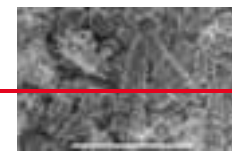
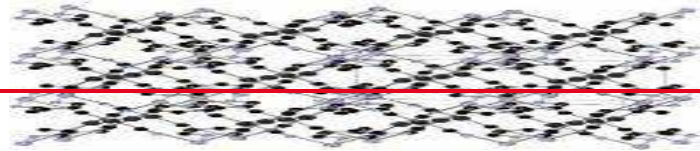
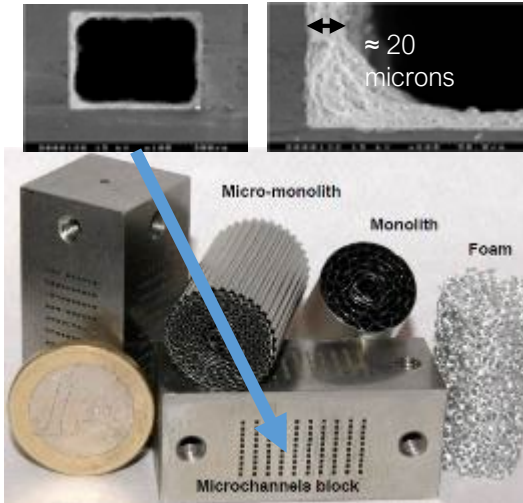
Research Institutes Focus

- ✓ Functional coatings and nanotechnology Applications
- ✓ Materials for Sustainable Development
- ✓ Data science, AI and mathematical modelling



The results of the research are focused on Health, Industry, Energy and Environment.

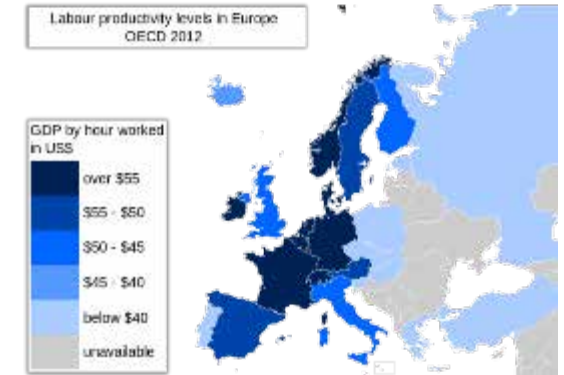
- **Health:** Pharmacological synthesis, Development of biomedical sensors, bacterial biofilms, controlled release of drugs, acoustics, food control.
- **Industry:** Surface treatment, laser, sensory spectroscopy, data processing.
- **Energy:** Magnetic Cooling, energy harvesting, biofuels, magnets for converting and generating electricity, hydrogen economy, high and ultra high frequency (UHF) electronic applications and control systems.
- **Environment:** sustainable processes, optimization of agricultural resources (water, fertilizers etc ...), detection of volatile organic compounds (VOCs) and recovery of industrial waste.



Research Institutes Focus



- ✓ **Economic analysis of organizations and business strategy:** analysis of business decisions and their economic performance. Study the microeconomic foundations of productivity, innovation and business growth. Entrepreneurship and new businesses.
- ✓ **Markets Economic analysis:** Study of the organization, regulation and operation of the different markets in which economic agents operate (consumers, companies, public institutions). Decision making and behavior modification.
- ✓ **Public policy Analysis:** research the design, evaluation and impact of public policies on economic and social development. The decision-makers of public institutions and administrations are largely responsible for the configuration of the economic environment and its regulation.



Research Institutes Focus



- ✓ **Soil, water and agriculture inputs management:** improvement of sustainable agricultural and livestock production systems. Environmental impact assessment of agricultural activity
- ✓ **Primary production:** food safety and traceability, by predicting and determining the quality of products by using non-destructive, instrumental and sensory techniques.
- ✓ **Food innovation:** emerging technologies for processing and preserving products such as high pressures, formulation and development of foods with healthy properties, functional foods or those ones adapted to situations with special nutritional needs; improvement of foods shelf-life.
- ✓ **Food consumption, nutrition & health:** Sensory analysis, innovative packaging, consumer food behavior, bio-hazard assessment, nutritional composition, healthy diets and habits, childhood obesity, Nutrigenomics, etc....
- ✓ **Agrarian economy:** Food markets analysis, Food regulation, Quality labeling, etc...



Research Institutes Focus



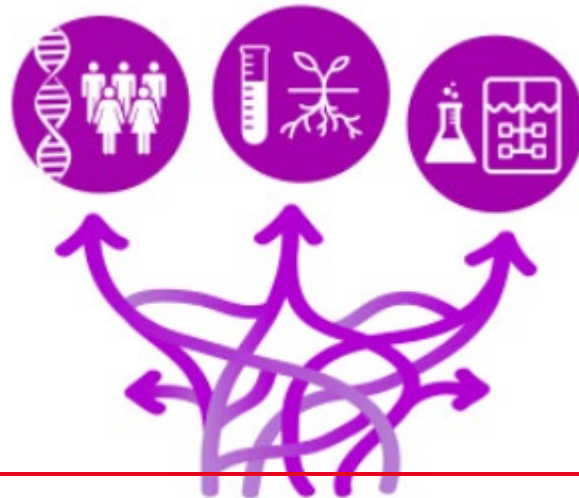
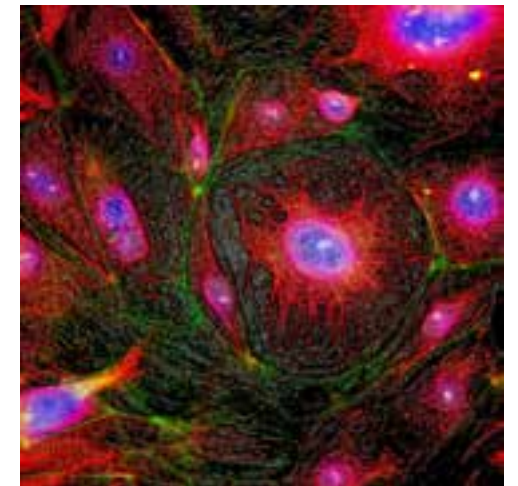
- ✓ **Territories and cultures:** Genesis of the urban world, Rural and urban sociology: mobility and territorial management, Cultural and linguistic heritage, education and arts, Temporalities, creativity and social change and Analysis of the religious fact
- ✓ **Memory, Politics and Identity:** Genesis of the State and characterization of power, Nationalisms and nationalization processes, Memories, social imaginaries and political cultures, Transitions, democracy, territorial model of the State and political parties, Political management of cultural diversity.
- ✓ **Human Rights:** History and current limits of human rights, Immigration, refuge, citizenship and multiculturalism, Freedom of conscience and public freedoms, Elites, power and corruption, Scientific-technological challenges and bioethical implications
- ✓ **Communication and Social Intervention:** Communication, plurality and social development, Intolerance and processes of legitimization of collective violence, Social inequalities and analysis of social policies, Anthropology and sociology of health: current challenges, Ethics of social intervention



Research Institutes Focus



- ✓ **Biotechnology:** Biotechnology of Agriculture, Microbial Biotechnology, crop protection, crop production, Health biotechnology
- ✓ **Environmental Agrobiology:** Management of agroforestry systems, Agrobiology and Plant Physiology, agrobiology, ecology, ecosystems and environment.



Ready 2 Transfer: Construcción



Fuente: Lugon

- **Sensórica y Comunicaciones:** Fibra óptica embebida en cualquier material, salud estructural, adquisición de datos (tránsito, usos, temperaturas, desplazamientos etc...), tratamiento de datos, IoT, Big data e IA, etc...
- **Materiales:** Metamateriales, Smart materials, materiales de construcción a partir de residuos, áridos mixtos, caracterización de materiales, separación y reciclaje de residuos de construcción mixtos (metales y otros), recubrimientos funcionales, materiales de construcción eco-activos para una neutralidad climática, cementos sostenibles de bajo impacto ambiental, etc...
- **Procesos:** IA, Optimización logística, evolución satelital, gemelos digitales, JIS (Just In Sequence), blockchain, reducción de mermas, evolución de obras en tiempo real con drones, etc...
- **Energía:** Smart grids, integración de redes, cargadores, generación – consumo, análisis de Huella de carbono y medioambiental, etc...

- **Mercados:** Evolución y proyección de mercados, legislación y normativas, análisis de políticas públicas, análisis de comportamiento de la ciudadanía y mercados, MKT, Gestión del cambio, Cadena de valor, etc..
- **Sociedad:** Nuevos modelos sociales, realidades territoriales, New Bauhaus, impacto social de cambios en los modelos de vivienda, urbanos, de movilidad, laborales, de núcleos familiares, etc...Comunicación y políticas sociales, etc...
- **Urbanismo:** SUDs, recuperación de espacios naturales, gestión de aguas residuales, etc...



First Spanish university in technology transfer and contribution to the regional development.

How do we do that?

- ✓ Calls with public funding (Reg, Nat, EU)
- ✓ Contracts



Involvement in all Regional Clusters

- Chair in Renewable Energy
- Jorge Oteiza Chair
- UNESCO Chair in Citizenship, Coexistence and Pluralism
- Chair in Research for Equality and Social Integration (CIPARAS)
- Jean Monnet Chair
- Chair in Intangible Heritage of Navarre
- AN Group Chair
- Chair in Leadership, Strategy and Business
- Chair in Industry 4.0
- Chair in Public Opinion and Social Innovation of the Parliament and UPNA
- Kutxa Work Chair in Knowledge Dissemination and Scientific Culture
- Family-owned Business Chair
- Manuel Torres Chair
- Woman, Science and Technology Chair
- Engineering and Enterprise Chair
- Apprentice-less Chair
- Sardenas Txelis Chair in Science and Heritage
- Chair in Synthetic Biology
- Chair in Logistics
- Chair in Social Economy and Cooperative Movement
- NILSA Chair in Local Sustainability
- INTIA Chair in Agrifood Transfer and Innovation
- Traxasa Chair in Computer Science and Artificial Intelligence
- Transfer and Innovation in Circular Economy Chair
- Chair in Electronic Technology



Involvement in all UPNA's professional clubs

- Ceo Club
- Financial Club
- Social Entities Ceo Club
- Entrepreneurs Club
- Club of Secondary School Directors
- Human Resources Directors Club
- R + D Directors Club





ADitech
COORDINADOR SINAI
Sistema Navarro de I+D+i

iCONS
iCONS. CLÚSTER DE LA INDUSTRIALIZACIÓN
DE LA CONSTRUCCIÓN DE NAVARRA

SISTEMA NAVARRO DE I+D+i  **SINAI** NAFARROAKO I+G+b SISTEMA