SERBIA CREATES OPPORTUNITIES

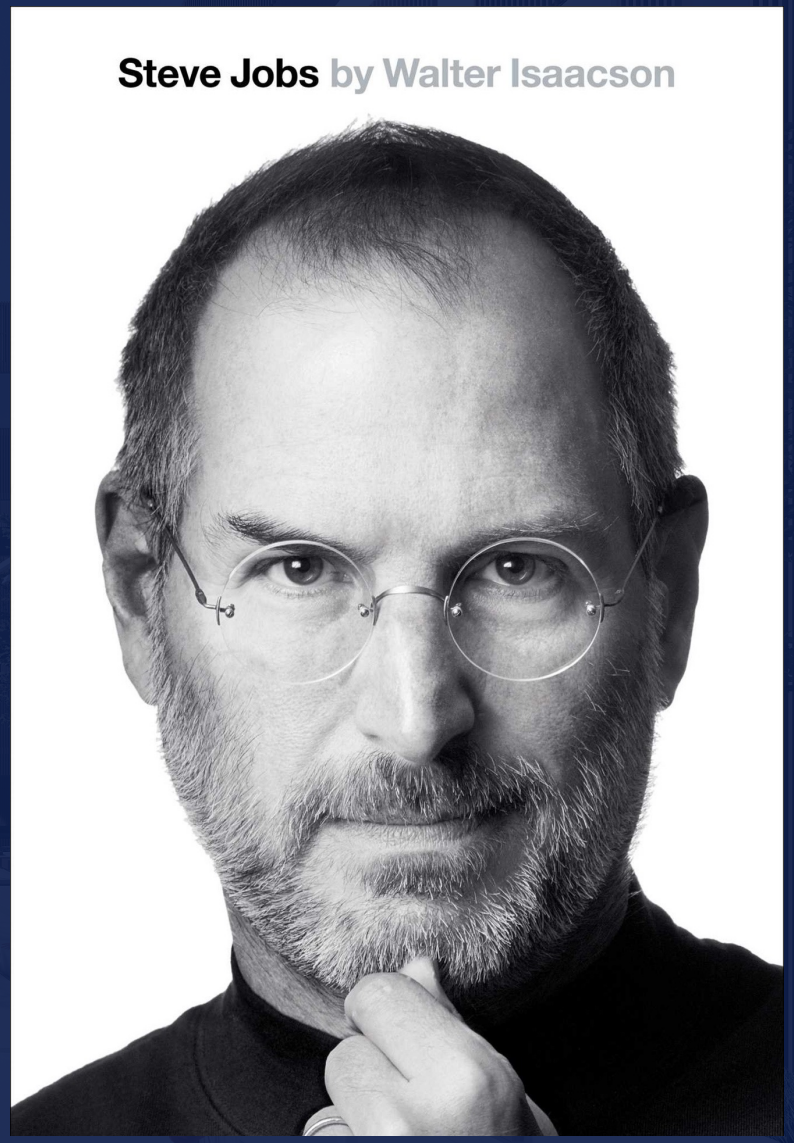
NEW BIOECONOMY HUB IN EUROPE



“I think the biggest innovations of the twenty-first century will be **the intersection of biology and technology**.

A new era is beginning, just like the digital one”

Steve Jobs, 2011



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.



“Ordinary people may not understand artificial intelligence and biotechnology, **but they can sense that the future is passing them by**.”

Yuval Noah Harari

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Located in South-Eastern Europe, Serbia is at the crossroads of the West, the EU, and Asia and **open for all**

Serbia is **one of the few countries in the world** where people from the USA, the EU, Great Britain, Russia, China, India, Turkey, the UAE, and other countries can enter without a visa.



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Serbia **embraced Tech as a top national priority…**

Digitalization and the fourth industrial revolution provided a unique opportunity for our country and its citizens to leap forward.



And we have achieved a lot in all areas - **education, public administration, economy and setting up infrastructure** for further development. We have succeeded in our goal of beginning this important transformation of our society and our economy.

We know that Serbia can do even better.

Join us to continue building on our mutual success.

Prime Minister's Manifesto, October 2020

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

…which **hugely paid off** during Covid-19.

OECD found that Serbia was among the top five countries in the world in innovative response to the pandemic.

BBC Home Menu

NEWS Menu

World | Africa | Asia | Australia | Europe | Latin Ar

Covid: How Serbia soared ahead in vaccination campaign

By Guy Delauney
BBC News, Balkans correspondent

10 February

Coronavirus pandemic

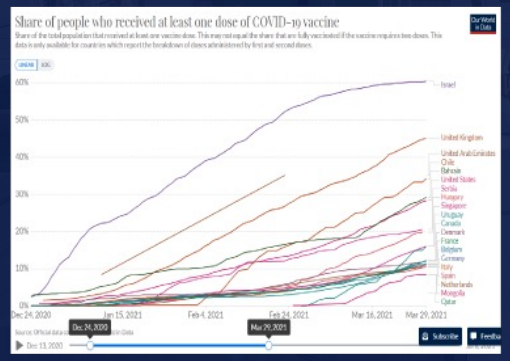
WORLD ECONOMIC FORUM

How technology helped Serbia save 180 million sheets of paper in less than 4 years



Serbian PM Ana Brnabić was speaking at the Global Technology Governance Summit.

Image: REUTERS/Denis Balibouse



Forbes Subscribe Sign In

Jun 15, 2021, 10:44am EDT | 2,322 views

National Digital Transformation: A Conversation With Serbia's Prime Minister Ana Brnabic

Robert C. Wolcott
Contributor
Leadership Strategy
Follow

I explore business, leadership and humanity in our technological age.

Listen to this article now -06:45
Powered by Trinity Audio



Serbia among top five countries of OECD initiative for reporting innovative responses during coronavirus pandemic

Belgrade, 1 June 2020

During the state of emergency, the Republic of Serbia implemented in a short time a large number of innovative solutions as a response to the crisis caused by the coronavirus and thus became one of the top-rated countries with the largest number of innovations during COVID-19 pandemic in the world.

Forbes Subscribe Sign In

Feb 5, 2021, 04:53pm EST | 22,393 views

Serbia And Key International Sovereigns Lead With Data And AI To Become Vaccination Champions

Mark Minevich Contributor
AI

Global Digital Cognitive Strategist , Digital Visionary, Artificial Intelligence expert, Venture Capitalist, Innovation CTO, author & AI contributor to Forbes.com

Listen to this article now -12:00
Powered by Trinity Audio





COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Serbia is **open for business**, and among the best in the world in attracting FDI

Financial Times has ranked **Serbia #1 in the world** in greenfield FDI performance, two times in the last 5 years.

City of Belgrade has been named a **City of the Future** in Southern Europe by the Financial Times.

According to Financial Times:
Serbia is "punching almost at 12 times above its weight" in attracting foreign direct investments**.**

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Serbia invested heavily in a **strong innovation ecosystem** and infrastructure…

Four Science-Technology Parks: in Belgrade, Novi Sad, Niš and Čačak, offer **the ecosystem of product development labs, mentors, investors and potential partners, knowledge sharing** and all kinds of assistance for faster growth.

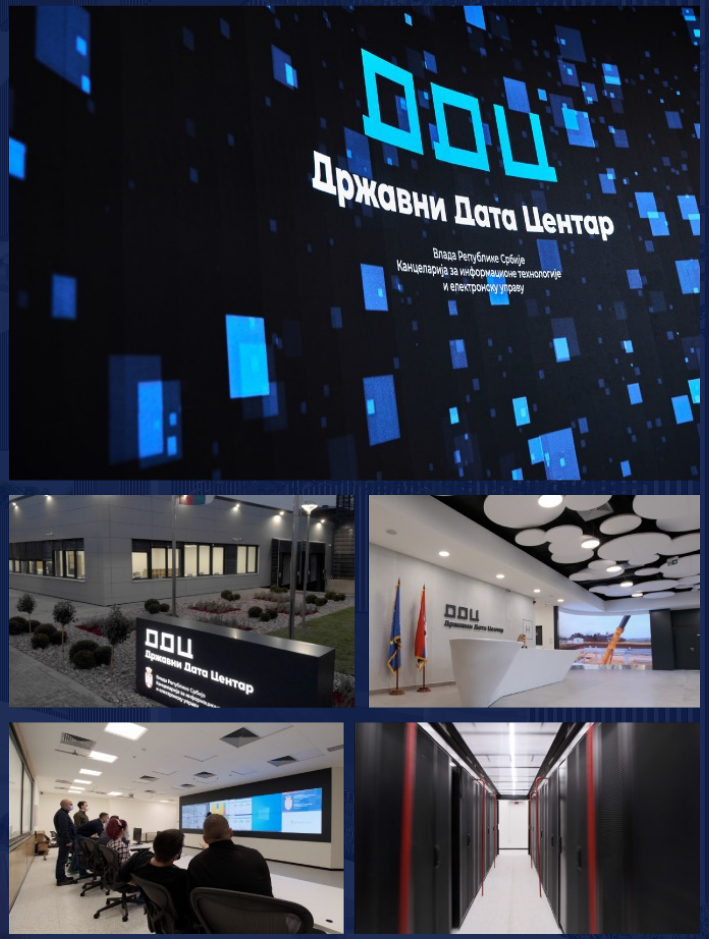




COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

…supported by a **state-of-the-art data center** with a Nvidia **supercomputer…**

- **The most advanced in the region** in terms of technical and security standards
- Hosts key information and communication infrastructure for the Republic of Serbia
- Hosts **Nvidia supercomputer with AI platform** of the latest generation
- The Center's services are, in addition to state institutions, **also available to commercial users**
- The Center meets the Tier 4 standard, ISO 27001 security standard, ISO 9001 and ISO 20000 quality standards



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

…and moving in strides in **digitalization of healthcare**



Health data in Serbia is digital, with already introduced:

- National EHR portal and app
- Central repositoriums of prescriptions and digital imaging (PACS)
- Software based management for Covid 19 testing and vaccinations
- Digital processes for administering the deceised
- Digital administration of clinical studies applications

And many advanced applications, like clinical decision support systems and AI based solutions, in the works.

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Recently, Serbia established the first **AI research Institute** and **national AI strategy** in SEE…



First country in Southeast Europe to develop a National AI Strategy



Established AI Institute with experts from Serbia and the world



AI introduced in two mandatory subjects in elementary schools, and in three subjects in high schools



Invested in 12 AI research groups at universities in Serbia



7 Masters level programs in AI Technology, securing a flow of 300 trained degree holders annually

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

and, together with **World Economic Forum**, opened Centre for the Fourth Industrial Revolution

Built to **support smart application of new technologies** in two priority areas:

1. **biotechnology and bioengineering and**
2. **AI in healthcare**

The Centre is assigned to **develop regulatory and cooperation framework** that will **enable and boost translation of biotech research discoveries into medical and biosynthetic products.**

Genomic and biomedical repository of Serbia is also in development.



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

New regulations provide **strong tax incentives** for the development of the knowledge-based economy

1. IP BOX
2. Double R&D deduction
3. Lower tax and contributions for salaries in R&D
4. Lower tax and contributions for repats and foreigners
5. Lower tax and contributions for youth employment
6. Favorable taxation of employee share plans
7. Salary tax and social contributions exemption for startup founders
8. Tax credit for investing in a startup
9. Tax credit for private individuals for investing in a Venture Capital fund



This **technology-driven ecosystem** has created an attractive environment for foreign direct investment…



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

…and notable acquisitions of Serbian startups are worth



T2 TAKE-TWO INTERACTIVE

EPIC GAMES

GoDaddy

NUTANIX

Schneider Electric

NORDEUS

3Lateral

DEVANA

FRAME

DMS NS

COPYRIGHT © 2021 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Serbia now recognizes the **revolutionary potential in convergence between life sciences and ICT** in at least four key areas of life…

Medicine,
with biologic treatments and personalized medicine



Agriculture *and* ***food production***,
with digital agriculture and personalized nutrition



Energy,
with new sustainable bio-based energy sources



Environment
and sustainability, with custom made microorganisms that will clean the Earth

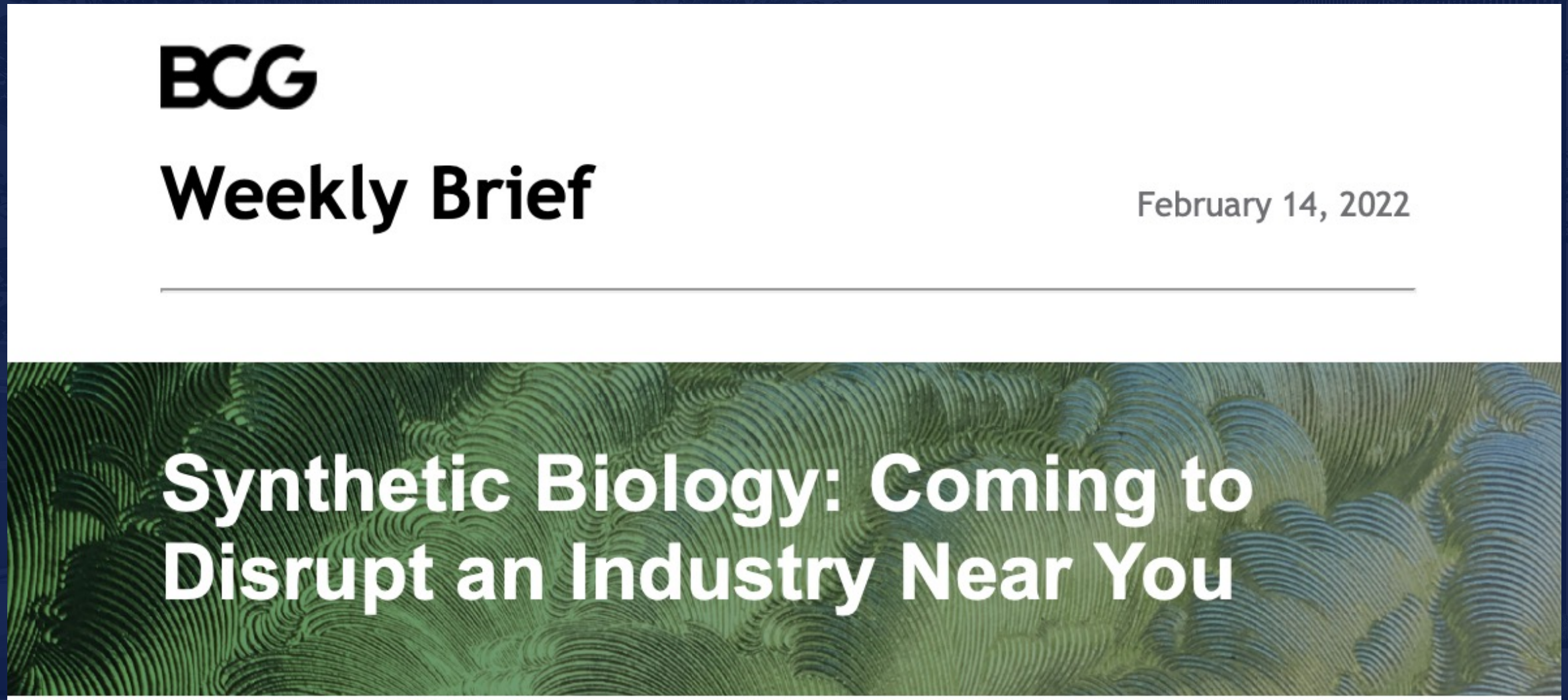


COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

…driven by new technology advancements, like **synthetic biology**…



…that is **quickly becoming mainstream**.



McKinsey calls this “**The Bio Revolution: Innovations transforming economies, societies, and our lives**”



Section 3

Today’s pipeline of applications is a fraction of the far-reaching impacts expected ahead

For this research, a library of about 400 use cases was compiled that already constitute a visible pipeline for the years ahead. The library comprises applications that are scientifically feasible today and likely to be commercially viable by 2050. Over the next ten to 20 years these applications alone could have direct economic impact of between $2 trillion and $4 trillion globally per year.

Serbia now builds on its ICT success and strong life science, establishing itself as a **new bioeconomy hub in Europe**

- **Serbia will soon be home to the BIO4 Campus**, a multidisciplinary R&D complex for life sciences
- BIO4 Campus will be a vibrant **concentration of people, knowledge and infrastructure** in these fields


Tanjug

Serbian gov't approves BIO4 Campus initiative

The Serbian government on Thursday approved an initiative by the Ministry of Education, Science and Technological Development to set up a BIO4 Campus in Belgrade.

26 Avgust 2021 18:23

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

The BIO4 Campus will occupy almost 20 hectares of land, focusing on **4 key topics**:

Biomedicine

*Medicine based on the **application of the principles of natural sciences** in clinical practice*



Biotechnology

***Using living organisms** and their derivatives to develop or make useful products and processes*



Bioinformatics

*Application of computational tools and analysis in **capturing and interpreting biological data***



Biodiversity

*Study of the **variety of life on Earth at all its levels**, from genes through organisms and ecosystems*



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

The BIO4 Campus will be built in traditional life science area of the capital city **Belgrade**…

- Close to **Institute for Virology, Vaccines and Sera “Torlak”**
- And to **national regulator for medicines and medical devices**



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

…and will be home to a multidisciplinary set of tenants, creating an **ideal ecosystem for innovation …**

1. ***Nine scientific institutes***
2. ***Five faculties*** *from* ***University of Belgrade***
3. ***Convention and multimedia museum center*** *for fostering collaboration*
4. ***R&D centers*** *of pharmaceutical, biotech, and life science companies*
5. ***Extension of Science-Technology Park Belgrade*** *for full support to BIO4 startups*
6. *Accredited* ***animal facility***

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

…in a beautiful architectural environment:







5 faculties from University of Belgrade:

Faculty of **Pharmacy**

Faculty of **Biology**

Agrifood-biotech center from Faculty of **Agriculture**

Translation center from Faculty of **Medicine**

Biochemical engineering and biotechnology of the Faculty of **Technology and Metallurgy**

9 scientific institutes:

Institute for **Molecular Genetics and Genetic Engineering**

Institute for **Artificial Intelligence**

Centre for Sustainable Management of **Bioresources and Natural Products** of the Institute for **Biological Research** "Sinisa Stankovic"

Institute for **Medical Research**

Institute for **Multidisciplinary Research**

Bioinformatics and Nanotechnology of the Institute "**Biosense**"

Center of Excellence in **Cardiovascular Medicine** of Institute for Cardiovascular Diseases Dedinje

Institute for **Appliance of Nuclear Energy**

Institute for **Institute of Chemistry, Technology and Metallurgy**





Accomodation for students and visiting professors

Bioextension of **Science-Technology Park Belgrade** and **Center for Ideas**

Convention and multimedia museum center „**Minglarium**“

Business Park for Life Science Companies

Accredited **Vivarium**

Core Centres and **Core Facilities,** including **BSL3 lab**




Ф
Б






СВЕЧАНА САЛА | 01
МЕДИЈАТЕКА | 01





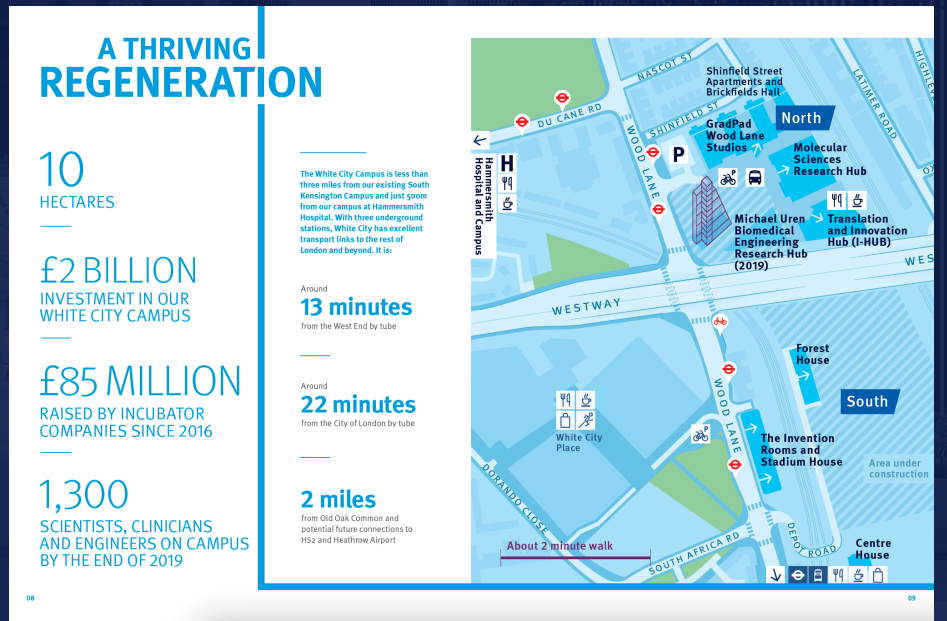




Relevant examples of other campuses around the world

1. Imperial College London White City Campus
2. Skolkovo Biological and Medical Technologies Cluster
3. Ecole Polytechnique Fédérale de Lausanne EPFL
4. Campus Biotech Geneva
5. Massachusetts Institute of Technology
6. Cambridge and Oxford
7. Barcelona Biomedical Research Park
8. The Hadassah Medical Center Hebrew University Biotechnology Park (JBP)
9. Biopolis SIngapore





AstraZeneca **moved its headquarters from London to Cambridge campus**

AstraZeneca moves HQ to Cambridge in research revamp

AstraZeneca, the drugmaker, is to invest $500m to build new headquarters in Cambridge to tap into the city's academic talent and expertise in bioscience research as part of a major R&D overhaul.

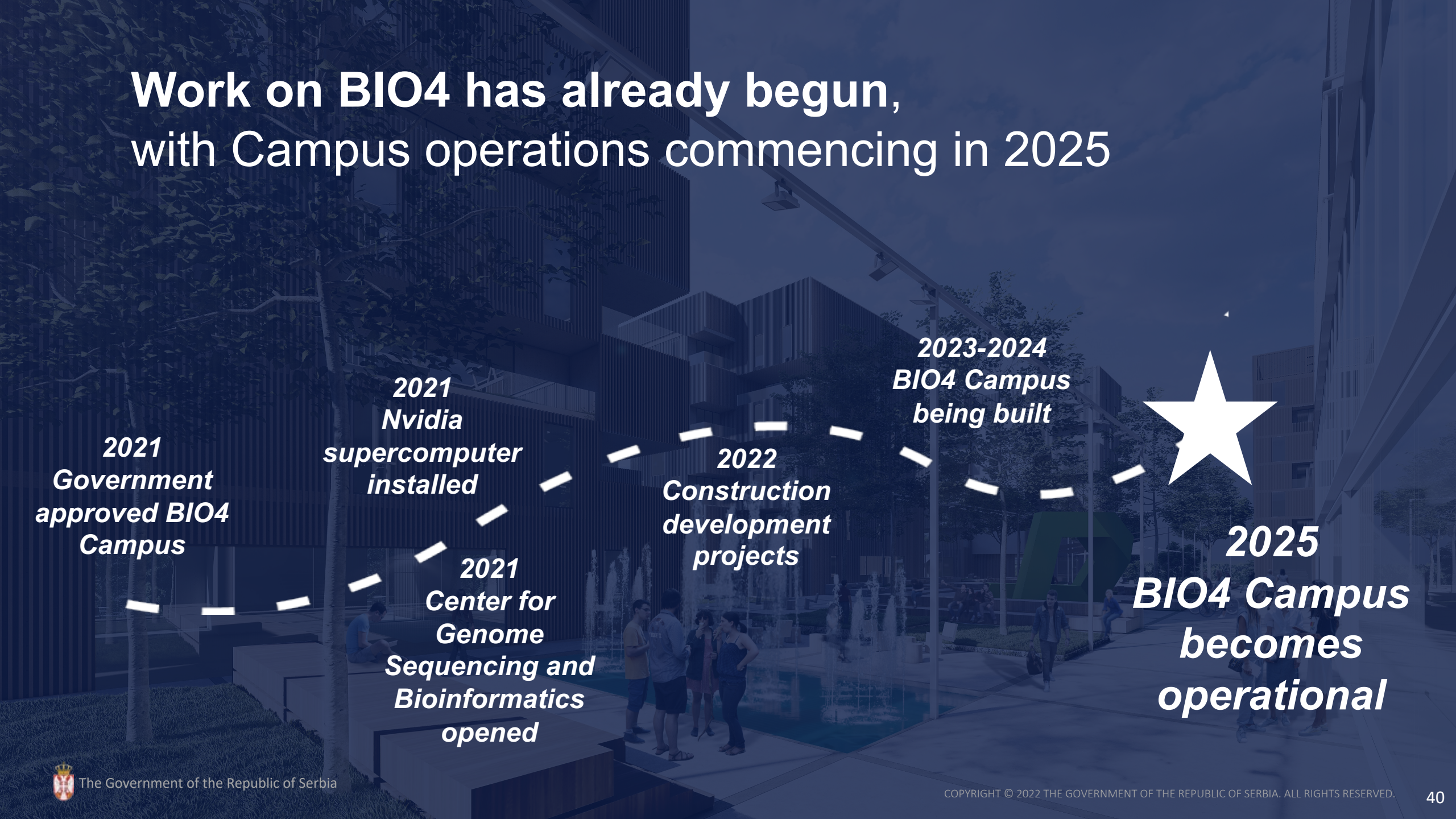
By Louisa Peacock • 18 March 2013 • 3:17pm





Similar trend of attracting companies can be expected of BIO4 Campus as well, and **initial interest is already visible**.

Work on BIO4 has already begun, with Campus operations commencing in 2025



The Government of the Republic of Serbia

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

BIO4 will be the campus, but already is the **platform to connect and foster collaboration**

We cordially invite:

Companies	**Companies, large and small, domestic and foreign, to cooperate with our scientific institutes and establish R&D and CDMO presence**
Investors	**Investors, to support innovations created in the BIO4 Campus**
Real Estate Developers	**Real estate developers, to build facilities for companies within the BIO4 Campus**

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Business meets education and science in various focus areas, like:

AI in Pharma & Healthcare	Bioinformatics and BIO-AI	Socio-microbiology	Biochemical Analysis	In Vivo and preclinical studies	Aqua cultures	Environmental Protection
Deep Computer Vision	Molecular Biology	Molecular Microbiology	Protein and Gene Expression	Nanotechnology	Phenotyping	Green processes
Natural Language Processing	Synthetic Biology	Microbiota-Human Interaction	Disease modeling	Patho-morphological studies	Animal and Plant Physiology	Immunology and biloogics
Multimodal and Distributed AI	Eco-biotech and Drug Development	Plant molecules and Biodiversity	Stereology	Probiotics	Neurosciences	Biosensoring

Partners and collaborators **benefit from a very supportive ecosystem**

Access to Skilled Talent

Highly skilled people, flexible to work on the most challenging projects.



Cutting Edge Infrastructure

Brand new buildings, labs and ICT infrastructure.



Strong Government Support

From generous tax incentives to supportive regulation.



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Partners and collaborators **benefit from a very supportive ecosystem**

Access to Skilled Talent | *Cutting Edge Infrastructure* | *Strong Government Support*



Available and skilled researchers

flexible to work on the most challenging projects



Access to the best students

in the field, with an opportunity for joint creation of educational programs and courses in relevant fields



Access to startups

with numerous opportunities for collaboration



Integration with medical system

which enables access to patients for clinical trials, and a comprehensive set of experts in all medical specialties and sub-specialties

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Partners and collaborators **benefit from a very supportive ecosystem**

Access to Skilled Talent | ***Cutting Edge Infrastructure*** | Strong Government Support



Comprehensive research infrastructure

Including biobanks, world-class data center, supercomputer, genome sequencing center etc.



Access to facilities

designed for collaboration and innovation



Accredited vivarium

with zebra fish, mice, guinea pigs, snakes etc.

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

Partners and collaborators **benefit from a very supportive ecosystem**

Access to Skilled Talent | *Cutting Edge Infrastructure* | ***Strong Government Support***



IP security in place

with a strong regulatory ecosystem that incentivizes R&D and provides legal protections of intellectual property



Strong tax incentives

including lower tax and social contributions for employees in R&D, diaspora returning home, foreigners and youth employment



Government's commitment

to supporting development of the biosciences sector

COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.

You are invited to **join us** in this endeavor!

For questions or inquiries, please reach out to:

BIO4@gov.rs



COPYRIGHT © 2022 THE GOVERNMENT OF THE REPUBLIC OF SERBIA. ALL RIGHTS RESERVED.