

Mapping Univer©ities

Eine Vermessung der Beziehungen von Universität und Stadt
The Landscape of Cooperation among Austrian Cities and Universities



Datum und Ort: 23.-24.02.2017, Aula der Universität Innsbruck, Innrain 52, 6020 Innsbruck
Date and Venue: 23.-24.02.2017 Aula, Main building, Universität Innsbruck, Innrain 52, 6020 Innsbruck

Tagungssprache: Deutsch und Englisch (ohne Übersetzung)
Language: German and English (no interpretation)

Donnerstag, 23.02.2017 | Thursday, February 23rd, 2017

Uhrzeit | Time Programm | Programme Ort | Venue

12:00 – 13:00 **Registrierung | Registration** Foyer

13:00 – 13:30 **Eröffnung und Begrüßung | Opening and welcome** Aula

- › Gerhard Fritz, City Counsellor for Urban Development, Innsbruck
- › Tilmann Märk, Rector, Universität Innsbruck
- › Oliver Vitouch, President, Universities Austria; Rector, University of Klagenfurt

13:30 – 15:00 **Städte und Universitäten – Lokale Akteure mit globaler Wirkung | Cities and Universities: Local actors – global impact** English Aula

Keynote

- › Robert J. Zimmer, President, The University of Chicago
Cities and Universities: the scope of partnership and a case study

Response

- › Tilmann Märk, Rector, Universität Innsbruck
Univer@ity Innsbruck
- › Sabine Pollak, Vice-Rector for International and Gender Issues, University of Art and Design, Linz
Cities and Universities. A sense of space.
- › Murray Pratt, Professor and Dean, Amsterdam University College
Learning opportunities and the city

Chair: Corinna Milborn,
Information Director, ProSiebenSat.1 PULS 4, Vienna

15:00 – 15:45 **Posterausstellung kombiniert mit Kaffeepause | Poster Exhibition including coffee break** Foyer

„Eine Vermessung der Beziehungen von Universität und Stadt“
„The Landscape of Cooperation among Austrian Cities and Universities“

15:45 – 17:00 **Projektvorstellungen | Project presentations** Deutsch Aula

- › 10 Kurzpräsentation á 7 Minuten ausgewählter Kooperationsprojekte zwischen österreichischen Städten und Universitäten
- › 10 short presentations á 7 minutes of best practice cooperation among Austrian cities and universities

Chair: Corinna Milborn,
Information Director, ProSiebenSat.1 PULS 4, Vienna

17:00 – 18:00 **Fortsetzung der Posterausstellung kombiniert mit Kaffeepause | Poster Exhibition continued including coffee break** Foyer

Freitag, 24.02.2017 | Friday, February 24th, 2017

Uhrzeit | Time Programm | Programme Ort | Venue

09:00 – 10:30 **Smart Cities – Die Zukunft von Universität und urbanem Raum | Smart Cities – Cities of the future** Deutsch Aula

Keynote

- › Jens A. Dangschat, Professor for Urban Sociology and Demography, Institute of the Sociology for Spatial Planning and Architecture (ISRA), Vienna University of Technology
(Stadt-)soziologische Perspektiven auf Smart Cities

Response

- › Verena Madner, Professor and Head, Research Institute for Urban Management and Governance, WU (Wirtschaftsuniversität Wien), Vienna
Die Transformation der Stadt zur Nachhaltigkeit - Erwartungen und Handlungsfelder. Einige Anmerkungen aus der Perspektive von Recht und Governance
- › Barbara Putz-Plecko, Vice-Rector for Artistic and Scientific Research and Quality Enhancement; Chair, Institute of Art Sciences and Art Education, University of Applied Arts Vienna
smart. Urbanismus und künstlerische Praxen
- › Wolfgang Streicher, Head of Institute for Structural Engineering and Material Sciences; Professor for Energy Efficient Buildings and Renewable Energy; Coordinator, „SINFONIA – Smart Initiative of cities Fully cOmitted to iNvest in Advanced large-scaled energy solutions“, Universität Innsbruck
Smart City Projekt Sinfonia und energetische Baseline und Szenarien für Innsbruck

Chair: Corinna Milborn,
Information Director, ProSiebenSat.1 PULS 4, Vienna

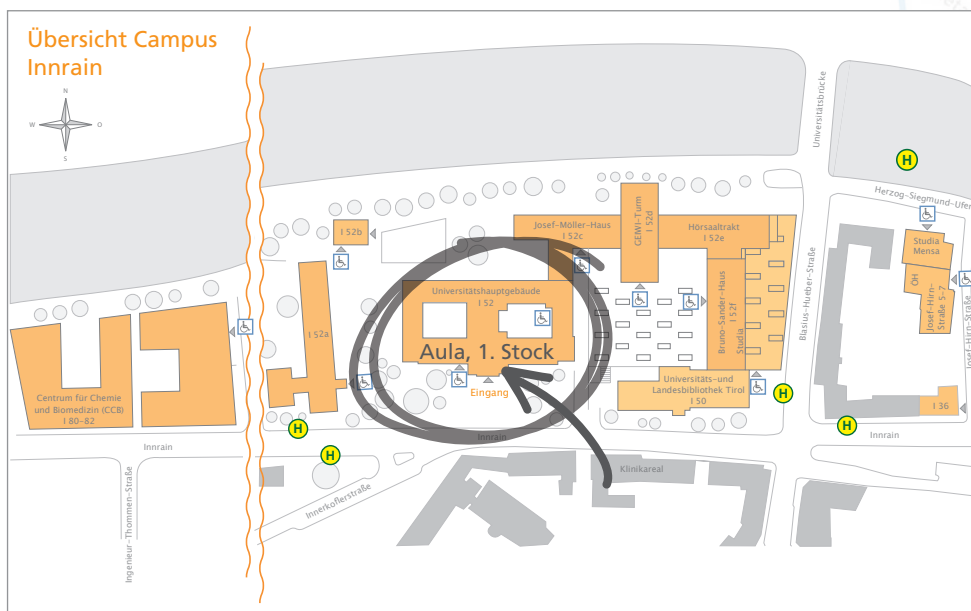
10:30 – 11:00 **Kaffeepause | Coffee break** Foyer

11:00 – 12:30 **Diskussion: Die Hohe Schule der Stadt – Was braucht die Universitätsstadt der Zukunft? | Discussion: University Cities of the future – What is needed?** English Aula

- › Helga Fritsch, Rector, Medical University of Innsbruck
Students, Science, Cities: Settings for the increase of knowledge.
- › Lea Meister, President, European Students' Union, Brussels
Universities, cities, academia: solutions for a tale of conflicts of autonomy, dependence and interaction
- › Patrick van Geel, Senior Advisor European Affairs, Urban and Economic Development and Co-Founder, EUniverCities Network, City of Delft
Why Cooperation between Cities and Universities matters
- › Barbara Weitgruber, Director General for Scientific Research and International Relations, Austrian Federal Ministry of Science, Research and Economy, Vienna
Higher Education Institutions: Shaping the Future of Urban Regions as Partners and Lead Institutions

Chair: Corinna Milborn,
Information Director, ProSiebenSat.1 PULS 4, Vienna

12:30 **Schlussworte und Mittagssnack | Final remarks and lunch buffet** Foyer



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Cities and Universities: the scope of partnership and a case study

Robert J. Zimmer

President, University of Chicago

Address at conference "Mapping UniverCities", Innsbruck, Austria

February 23, 2017

It is a great pleasure for me to be back in Austria and particularly so at this moment of deliberation about cities and universities and their common future. Cities, of course, have played a fascinating role in history for thousands of years, and universities are commonly dated back almost a thousand years. The oldest of universities are among the most long-lasting institutions, other than religious institutions, in the world. Cities and universities have had important relations to each other as they have evolved over the last millennium, as they both became increasingly important structures to our many evolving societies. Most, including me, believe their synergy will present increasing opportunities and, along with these opportunities, increasing expectations. I think systematic thought about this relationship and its future potential is a very enlightened step, and I am grateful for the invitation to be part of it.

As we are all aware, the evolution of cities as a key driver of societal development has been accelerating. In 1800, 3% of the world's population lived in urban areas, in 1900 it was about 13%, and by 1950 33%. Today it is over 50%. By 2050 it is projected that over 2/3 of the world's population will live in urban areas, adding over a billion more people in urban areas than we have today. In China alone in the past 25 years, the number of people moving from rural to urban areas is about equal to the total population of the United States. In other words, the past 100 years have seen a total transformation in the role of cities and this will surely continue through the next 100 years. It represents an enormous transformation in the way people around the world live and the nature of experience of human life.

Most agree that universities as a formal structure began in Europe almost a 1,000 years ago. In many ways over the past millennium European cities and their universities, as well as those in the United States and Canada, have evolved together. When the University of Bologna, widely recognized as the first university, was formed in the late 11th century, Bologna's total population was about 30,000. When Oxford University was established, nearby London had a population of about 30-40,000, and when the University of Vienna was founded, it is estimated that the city's population was only about 20,000. So these great cities were in fact quite small towns by today's standards at the founding of their universities. Even Paris, the largest city in Europe in 1200 when the University of Paris was founded, had a population of 100,000 at that time. And the great transformation of universities that occurred in 1810, with the creation of the "German model" in the founding of the University of Berlin, took place in a city of 175,000.

In the United States, the story is similar. The first university in the United States was Harvard, and when it was founded the entire population under the jurisdiction of the original 13 colonies together was only about 25,000. In the second half of the 19th century, as Chicago was growing extremely rapidly from a small town of 25,000 to almost 2 million, the city leaders recognized that their aspirations to be a city on the global stage could not be realized without a great university. They answered John D. Rockefeller's challenge and helped create and sustain the University of Chicago.

The early history of the relationship of universities and cities (again really towns by our standards today) shows the seeds of many mutually advantageous aspects of this relationship as well as some of the challenges. Ruling authorities since the early days of universities have recognized the value of universities in attracting talented individuals, training them in needed skills, and the advantageous that accrue to their towns. The eagerness to establish universities in various cities in the centuries following the founding of the earliest universities testifies to cities not wanting to be left behind. In addition to

universities making cities a magnet for talent, the influx of students provided economic benefits. However, with these benefits came stresses as well. In some towns rents became elevated making landlords happy and other residents unhappy. There were ongoing tensions, sometimes even battles, between students and townspeople, and governments often protected students and universities against some more egregious attempts by locals to gain economic advantage. There was an ongoing struggle for control of universities between state, churches, and universities themselves. Universities offered recognized advantages to authorities but sometimes student rebellion was in the air – not always pleasing to either government or university officials. Reading these early histories, it is quite striking how the opportunities and challenges at the interface of cities and universities that we see today had resonances centuries ago.

But it was not just that universities benefited cities – the converse was true as well, far beyond issues of economy and protection. Cities, by their very vitality and activity, became a place of enhanced learning. One of the earliest and most interesting cases of this is the story of John of Garland (or Johannes de Garlandia). Teaching at the University of Paris soon after its founding at the start of the 13th century, he wrote a short work called *Dictionarius*. He encouraged students to walk around the city to see all the workers and shopkeepers, and used this stroll as a way of introducing a large and almost dizzying Latin vocabulary to students. Already, 800 years ago, the vitality of the city was being used as a source of instruction. (This work by the way is thought the origin of the word “dictionary”.)

The emergence over the 20th and 21st centuries of urban areas as the dominant home for the world’s population inevitably focuses one’s attention on the great strengths and challenges cities face. For the purposes of this discussion, let me organize them into three large scale features each defined by a different lens on the city.

The first lens is the city of energy and excitement. Cities are magnets for people who stimulate and implement new ideas, generate economic activity, enhance - and benefit from - a diverse cultural environment, and who are often welcoming, competitive, cosmopolitan, and energetic. It where young, ambitious, intelligent, successful, or innovative people meet, create, and invent institutions, activities, and businesses for economic, social, cultural, scientific and personal benefit.

The second lens is the city of vulnerability. There are always groups of individuals who do not benefit from the advantages of the city of energy and excitement. This has multiple causes. Forces of history, demographics, ethnic and racial tension, family problems, and exclusionary behavior often lead to pronounced versions of such difficulties. Moreover, there will simply be those who are not able, for one reason or another, to function well within the structures of the emerging nature of cities. All of this can lead not only to situations that are distressing from a human perspective, but create significant social problems of poverty, disparities in health care and education, crime, abusive families, abandoned children, substance abuse, and more.

The third lens is the city of technical complexity. As cities grow there are huge technical problems for how they work. Energy, pollution, clean water, sewage, transportation, fire protection, housing, education, services for the elderly, health care, quality of food supply, parkland, in some environments earthquake issues, noise and more all present challenges for the common quality of life. Simply understanding in any detail what is actually going on in this immensely complex system is itself a problem, and certainly finding appropriate policies and the technology and resources to implement them is a challenge.

Each of these lenses is exactly that – a way of looking at the city, while in reality the phenomena that each emphasizes is inevitably intertwined with those of the other.

How do universities interact with cities through these three lenses? As is often the case, the energetic and exciting lens is in many ways the simplest. The description of cities as magnets for talent and the multiple forms of creativity that result can be applied almost word for word to universities. As a result, cities and universities, as they have for a millennium, reinforce each other. In this way, there is huge positive synergy simply by the nature of cities and universities themselves. In a sense, they automatically engage and support each other. It is in fact almost impossible to imagine many of the world's great cities without their universities – Paris, Vienna, London, Beijing, New York, Hong Kong, and Chicago would be a shadow of their present selves if their universities disappeared.

That said, there are many ways in which universities and cities can and do purposefully reinforce this synergy and make it more focused. We see this in aligned investments; city support for university innovation centers that in turn create companies; universities activity helping government officials recruit existing business to relocate; companies in cities creating internship opportunities for students which in turn give them access to and relationship with talented young individuals - some of whom may work for the company on a permanent basis; and other such mutually leveraging activities.

But what of the other lenses, the city of the vulnerable and the city of technical complexity – how do universities appear in relation to cities when looked at through these lenses? Here too there are commonalities simply on the basis of what cities and universities are. Faculty write research papers on a wide variety of topics connected to policy options for the most vulnerable which may have impact on the development of policies. Engineers develop tools on a wide array of issues applicable to cities' technical problems. Alumni go to work for cities trying to address these issues. Once again, these are natural, almost automatic connections based on what universities do and what cities are. Furthermore, as major institutions inside cities, universities almost always support a set of programs as a matter of institutional citizenship, not unlike other major economic players in a community.

Most of these connections, however, are mediated by time and layers of development before there is any concrete advance for the quality of life in cities. As those who run cities experience every day, city leaders need to make decisions quickly. While recognizing the long term impact of university work on cities as seen through the lenses of the vulnerable and technical complexity, such work often does not impact city leaders' options in an immediate way as they face daily challenges.

It was this latter issue that we began asking ourselves about at the University of Chicago. Is there a way in which we could better provide direct impact and direct engagement with policy makers and implementers, with city leaders and NGO leaders, which is more tangible, immediate, and impactful, yet which fully comported with what a university was about? In other words, could we develop an approach that was not one that happened automatically because of what universities and cities were, but was more purposefully designed and directly aided cities? Could we do this with a particular emphasis on the lenses of vulnerability and technical complexity? Could we do this in a way that supported or enhanced our research and education?

We have started a significant number of activities in this direction, some led by our vice president for civic engagement, others led by our faculty. Among the latter are a set of programs called UChicago Urban Labs, which are now part of a new and larger initiative that we are launching called the Mansueto Institute for Urban Innovation. It is to a description of UChicago Urban Labs and its work that I now turn.

Based on an earlier effort begun in 2008 called the Crime Lab, two years ago we expanded to five "Urban Labs", in the areas of crime; education; energy and environment; health; and poverty. The aim of these labs was to work directly with government agencies or non-profits to both develop and test policy interventions that, upon showing positive results under randomized controlled experiments, would then be implemented. Thus, the high capacity of the University to collect, clean, manage, and

analyze data would be applied in direct partnership with government agencies as policies were being developed and implemented. The goal was to develop and implement evidence-based policies that would be more effective and to do so in a rapid and more cost efficient way. Each of these labs now has a wide variety of projects under way with a number of agencies, and sometimes number of cities. As I speak, there are a total of 67 such projects in the 5 labs together, with requests coming in every day to do more. The Crime Lab has opened offices not only in Chicago but in New York, at the invitation of the City of New York. The Energy and Environment Lab is actively involved not only in Chicago but in India and hopes to be doing projects soon in China. There are over 80 people employed in the Labs and they have a current annual budget of about \$13 million.

Obviously, I am not going to describe 67 projects to you. But I thought I would give one example from three of the Labs to indicate the nature and scope of the work.

Let me begin with the Crime Lab and their recent work on bail decision making.

The United States has over 700,000 people in local jails at any given time, in addition to 1.5 million in state and federal prisons – a well-known national mass incarceration problem. Most of the individuals in local jails have not yet been tried and are awaiting judgment by the criminal justice system. Those awaiting trial can for the most part be let out on bail by a judge. The solution to the local jail component of the mass incarceration challenge of the United States is not simply to release more people on bail, since among those individuals that judges currently release, between 20 and 30% will either flee (fail to show up again in court) or commit a new crime. The Crime Lab has been using techniques of machine learning to build and evaluate tools to help judges make better bail decisions. This work represents an ideal application for machine learning because by law a judge's decision is supposed to hinge entirely on his or her assessment of a defendant's risk of flight or risk to public safety if released—that is, the judge's decision hinges entirely on a prediction. Preliminary findings suggest that using a new machine learning tool developed by the Crime Lab - instead of relying on judge intuition - could reduce the jail population within the local jail system by over 40%, without an increase to the current crime rate, and with the added benefit of reducing racial disparities among those incarcerated. This tool (unlike many

social programs) is very easy to scale. The Crime Lab is currently in discussions with several jurisdictions around the country about carrying out a randomized controlled trial to pilot-test such a tool in the field which, if successful, may lead to larger-scale adoption.

Now let me turn to the Education Lab, and describe a joint project of the Education Lab and the Crime Lab, as an illustration of how these domains interact.

The majority of homicides in Chicago stem from altercations that turn into tragedies because one of the parties overreacts to a provocation. To an observer, often the provocation seems quite minor, while the response seems very impulsive—almost automatic. How can we help youth avoid the kinds of automatic behavior that can be dangerous or deadly in some urban neighborhoods? A program called Becoming a Man (BAM), developed originally by an NGO, has been shown to be highly effective in addressing the sort of impulsive, automatic responses that can lead to violence. BAM offers youth weekly group sessions during the school day and uses cognitive behavioral therapy to help youth to slow reactions in high-tension situations. In two randomized controlled trials, the Crime Lab and Education Lab found that BAM cuts violent-crime arrests among youth in half and boosts the high school graduation rates of participants by nearly 20 percent. The program and this rigorous evidence of effectiveness were key inspirations for President Obama's My Brother's Keeper initiative, and Chicago policymakers are now investing public resources to expand BAM as part of the city's violence reduction strategy. For example, as part of Chicago Mayor Rahm Emanuel's public safety plan, the city is investing an additional \$36 million in mentoring programs motivated by BAM.

Here is an interesting example from the Energy and Environment Lab, involving a partnership with the US Environmental Protection Agency.

In 2014, there were over 440,000 facilities in the U.S. eligible to be inspected by the Environmental Protection Agency (EPA). In that same year, the EPA had resources to inspect only 1,300 of them – fewer than one third of one percent. Of those inspections, 28 percent uncovered violations. Also in that year, over 30,000 hazardous waste spills occurred – about one every eighteen minutes, causing over \$85 million in property damages in addition to environmental hazard. Much of this damage could be avoided with increased compliance with EPA standards.

In partnership with the EPA, the Energy and Environment Lab is working to improve compliance and overall hazardous waste safety through a combination of machine learning techniques and field tested results. The Energy and Environment Lab built a predictive model to forecast the likelihood that a facility would commit a severe violation within the next year. Training and testing this model on 15 years of historical data found that the model has the potential to increase the number of severe violations uncovered by EPA inspections by 50 percent, without expending additional resources. The Lab is now working with the EPA to further evaluate the real-world performance of its predictive model through a rigorous field test. By comparing the model's performance against the EPA's performance, the Lab will generate evidence on how accurate the model is at identifying severe violators and determine how the EPA could best leverage it as an enforcement tool.

What general perspectives have we gained as Urban Labs have advanced?

First, we feel that the model of purposeful direct engagement - on policies and implementation between universities and cities - works. In fact, we have been encouraged enough that as the Mansueto Institute for Urban Innovation develops we will likely open some new labs. At least one will be connected to a project called the Array of Things, which is a joint project of the City of Chicago, the University of Chicago, and Argonne National Laboratory which the University operates for the U.S. Department of Energy. The Array of Things is an urban sensing project, a network of interactive, modular sensor boxes

that are being installed around Chicago to collect real-time data on the city's environment, infrastructure, and activity for research and public use. It measures multiple factors that impact livability in Chicago such as climate, air quality and noise. The data will be made available to all. This is very much in the spirit of smart cities, an idea that I know will be discussed further at this conference. The efficacy of such a project in its various forms could itself be a project for a new urban lab.

Second, the learning from the Labs is sometimes scalable, but one needs to be cautious about assuming too much. Having policies that work in one environment may or may not work in another because the ambient situation, and very importantly the ambient culture, may be different. Extending the Becoming a Man program from Chicago to a national program, as President Obama did, may be justifiable (although it should still be tested.) But the lesson on a global scale may be less the exact applicability of specific results to address a problem but rather the efficacy of the partnership and methodology of the UChicago Urban Labs.

Third, moving beyond the Urban Labs themselves, our experience has only made us more optimistic about the mutually beneficial relationship of cities and universities. We have discussed how there are many synergies simply on the basis of the nature of cities and universities, and how that can be built upon. But the purposeful engagement for more tangible and immediate impact, and thinking through those possibilities, has shown that it can yield powerful results beyond what happens close to automatically. In that sense Urban Labs is an experiment in a different type of relationship and partnership. The further exploration not only of how Urban Labs can be extended and made more efficacious, but of what other vehicles might be established for purposeful direct impact, is a promising area of exploration for us all.

Once again, thank you for inviting me to participate in your important deliberations.