Liefner, Ingo	2003	Funding, resource allocation, and performance in higher education systems	Funding sources of higher education institutions, national higher education systems, performance of universities, resource allocation in higher education, research universities	This article analyzes forms of resource allocation in university systems and their effects on performance in institutions of higher education. Internationally, higher education systems differ substantially with regard to research and education funding sources and to ways that resources are allocated. European universities receive the majority of their funding from public sources, but private funding plays a more important role in Anglo-American systems of higher education. This article analyzes how various forms of funding and resource allocation affect universities at the macro-level and individual behavior at the micro-level.	First the sources of funding and the internal budget allocation of the six universities are described to demonstrate international differences in funding and resource allocation. This section is followed by a discussion of the principal-agent theory, a concept that leads to hypotheses about the effects of performance-based budgeting on individual behavior. The theoretical hypotheses are then compared with empirical findings (based on case studies of universities and in-depth interviews with higher education administrators and professors. The final section examines additional factors that may influence the long-term success of universities and ends with a brief discussion of implications relevant to university administrators.	A theoretical approach to this problem suggests that performance-based funding tends to bring about positive changes but is also a factor in unintended side effects. Forms of resource allocation influence the behavior of academics and managers in higher education, particularly their levels of activity as well as the kinds of activities they engage in and their ways of dealing with risks. Empirical analyses partly confirm these hypotheses. It can be shown that changes in resource allocation have an impact on the level and type of activity academics concentrate on but not on the long-term success of universities. This paper has shown that there is obviously no a priori superior approach to successful resource allocation in education and research. Furthermore, the culture and tradition of universities and national HES have only limited influence on the peoples' reactions towards performance-based budgeting.	The differences in national or university cultures and funding arrangements are reflected in the expectations connected to performance based resource allocation. But, these differences in expectations are relatively small compared to the common views of the interviewees on the prospective outcome of a strongly competitive funding system (e.g., more applied research, an increased number of publications, market application).	Higher Education, Vol. 46, Issue 4, pp. 469-489 (2003)	C / 40
Lin, Min.-Wie and Bozeman, Barry.	2006	Researcher's industry experience and productivity in university-industry research centers: a scientific and technical human capital explanation	technology transfer, industry-university relations, innovation	We examine the impact of researchers' previous industry experience on the research outputs and outcomes of university faculty affiliated with NSF and DOE research centers.	Using a dataset combining curriculum vita and surveys, our results indicate significant differences between the researchers who have previous industry experience and those who do not. Using a simple model of research productivity, we found that academic researchers who had prior industry exposure produce fewer total career publications, but they support more students.	Most important, and perhaps surprising, we could not establish any difference between the two groups' publication activity when focusing on a five-year cross- section (years 1996–2000) rather than total career publications. We found statistical evidence that previous industry experience raised the annual publication productivity of junior faculty members and women researchers in our sample of research center personnel. We believe the unique blend of research center affiliation, academic post, and past industry experience gives an individual who embodies or possesses all three characteristics a diverse source of scientific and technical human capital and particular advantages over those who have no industry experience (though the ''academic-only'' set also has particular advantages in cumulative publishing productivity).	In addition to possible selection effects, the results may be biased from misspecification due to omitted variables. More specifically, we have not included in our model any psychological effects or other individual differences in ability and motivation that may set the industry researchers apart from the purely academic scientists.	Journal of Technology Transfer, Vol. 31, Issue 2, pp. 269-290 (2006)	B / k.A.
Link, Albert; Siegel, Donald and Bozeman, Barry	2007	An empirical analysis of the propensity of academics to engage in informal university technology transfer	technology transfer, university, industry	Surprisingly, there has been little systematic empirical analysis of the propensity of academics to engage in informal technology transfer. This paper presents empirical evidence on the determinants of three types of informal technology transfer by faculty members: transfer of commercial technology, joint publications with industry scientists, and industrial consulting.	Our data on informal technology transfer are derived from the Research Value Mapping Program Survey of Academic Researchers. Survey data were collected from a sample of university scientists and engineers with a Ph.D. at the 150 Carnegie Extensive Doctoral/Research Universities during the time period spring 2004 to spring 2005 sampling population of 1514 full-time tenured or tenure-track scientists and engineers.	We find that male, tenured and research-grant active faculty members are more likely to engage in all three forms of informal technology transfer. Clear finding is that tenured faculty members and those who are actively involved in research grants are more likely to engage in informal technology transfer than non-tenured faculty members. Finally, we find that faculty members who currently allocate a relatively higher percentage of their time to grants-related research are more likely to engage in all forms of informal technology transfer.	Possible response bias to the survey, although we weighted responses to mirror the population of scientists and engineers. Another concern is that we have simple, dichotomous measures of informal technology transfer. The latter may be problematic because such measures do not account for the extent of such activity or for the nature and characteristics of the technology that is transferred. In addition, our data do not allow us to control for the possibility that informal technology transfer, as we have measured it, in the current time period can develop into formal technology transfer in subsequent time periods. As well, our data do not allow us to explore the possibility of a complementary relationship among the three measures of information technology transfer—contemporaneously complementary or complementary over time.	Industrial and Corporate Change, Vol. 16, Number 4, pp. 641-655 (2007)	C / 91
Markman, Gideon; Siegel, Donald and Wright, Mike	2008	Research and Technology Commercialization	research, technology, entrepreneurial teams, incentives	This paper introduces the special themed section on organizational interactions involving universities and firms that result in the commercialization of research and technology. Our objective is to shed light on some of the most vexing, yet under-researched predicaments research institutions encounter, despite their best efforts to advance commercialization.	First, we synthesize and extend recent studies, including the papers in the special themed section. Next, we develop a taxonomy of modes of commercialization. Specifically, we consider internal approaches, quasi-internal approaches (e.g. incubators), university research parks, regional clusters, academic spin-offs and start-ups, licensing, contract research and consultancy, corporate venture capital, and open science and innovation.	We provide an introduction to the special themed section of JMS on organizational interactions involving universities and firms that result in the commercialization of research and technology.	We also identify areas for further research at the individual (e.g. heterogeneity of entrepreneurial teams and experience; incentives), organizational and intra-university (e.g. corporate governance; nature of growth strategies; relationships with trading partners; boundary spanning activities) and technology levels (e.g. institutional context; reconfiguration of technology; valuation of technology).	Journal of Management Studies, Vol. 45, Issue 8, pp. 1401-1423 (2008)	B / 36
Merten, Wolfgang und Kirchner, Michaela	2007	Wissenschaftsmarketing - Ende der Beliebigkeit: Ausbildung statt "trial and error"	industry marketing, research areas, universities	Entscheidungsträger aus Forschungseinrichtungen, Hochschulen und Wissenschaftsorganisationen bedienen sich lange schon der Instrumente des Wissenschaftsmarketings. Hier gilt es, durch eine systematische Professionalisierung Berührungsängste abzubauen und Handlungsspielräume zu gewinnen.	keine Empirie; Expertenmeinung	Im Zuge der Entwicklung des Europäischen Hochschulraums durch den Bolognaprozess, der Lissabon-Strategie, der Exzellenzinitiative der Bundesregierung, des Hochschulpaktes u.v.m. verlangt der immer mehr eingeforderte Wettbewerb eindeutige Positionierungen, eine klare Marktstrategie und eine überzeugende Selbstdarstellung in der Öffentlichkeit wie gegenüber den relevanten Gremien. Die Ergebnisse der Exzellenzinitiative haben bereits den Vorsprung derer bestätigt, die den Weg vom Behördenmodell zum „Unternehmen Hochschule“ bereits beschritten haben. Die traditionelle Organisation von Forschung und Entwicklung, Hochschulmanagement und Verwaltungshandeln muss sich in dem Maße ändern, in dem sich die Herausforderungen an Marketing und Kommunikation den Usancen der Wirtschaft annähern.	Wenn wir soweit sind, dass Rankings und leistungsbezogene Mittelvergabe nicht als Zumutung, sondern als Entwicklungschance begriffen werden sollen, ist die Voraussetzung für einen tief greifenden und zugleich befreienden Mentalitätswandel und Modernisierungsprozess gegeben.	Wissenschaftsmanagement, Jg. 13, Heft 4 (Juli/August), S. 16-20 (2007)	k.A. / k.A.
Mueller, Pamela	2006	Exploring the knowledge filter: How entrepreneurship and university-industry relationships drive economic growth	regional growth, knowledge, entrepreneurship	The existing knowledge stock might not be commercialized to its full extent; therefore, knowledge flows must occur and transmission channels are needed. The paper tests the hypotheses that entrepreneurship and university-industry relations are vehicles for knowledge flows and, thus, spur economic growth.	Cross-sectional time series. In order to test the hypothesis that entrepreneurship and university–industry relations stimulate economic growth, a Cobb-Douglas production function is employed in order to estimate regional economic performance for the West German regions between 1992 and 2002.	First, a well developed regional knowledge stock is a crucial determinant of regional economic performance. New knowledge needs to be generated at existing firms and research institutions before it can be exploited. Secondly, regions with a higher level of entrepreneurship experience greater economic performance.	The analysis is restricted to West Germany because East Germany can be regarded as a special case with very specific conditions not comparable to the West in the 1990s.	Research Policy, Vol. 35, Issue 10, pp. 1499-1508 (2006)	A / 63

Müller, Ulrich und Langer, Markus	2008	Hochschulnamen als Marke	university, brand, assessment	Nach welchen Kriterien lässt sich ein Hochschulname bewerten, wie kann man alternative Hochschulnamen gegeneinander abwägen?	keine Empirie; Expertenmeinung	Bezogen auf den sogenannten Markenvierklang (Bekanntheit, Sympathie, Intention, Verhalten) wirkt der Name einer Hochschule insbesondere auf die beiden ersten Stufen. **Konstruktionstypen:** Sponsor/Stifter + Hochschultyp + (-ort) Patron + Hochschultyp + Ort Hochschultyp + Ort Universität Kassel Phantasiename (+ Hochschultyp + Ort) prägendes Adjektiv + Hochschultyp + Ort Freie Universität Berlin Region + Hochschultyp + Ort Hochschultyp + Ort + Zusatz Hochschule Wismar – University of Technology, Hochschultyp + Fachrichtung + (Ort) Universität der Künste (Berlin) **Bewertungsdimensionen:** Eindeutige regionale Zuordnung, Adäquate Darstellung des institutionellen Anspruchs, Eindeutige Kennzeichnung des fachlichen Profils, Hinweis auf überfachliche Profilelemente, Bekanntheit der Namensbestandteile, Positive Konnotation der Namensbestandteile, Internationale Darstellbarkeit, Abkürzbarkeit, klarheit/Prägnanz, Sicherstellung der Kontinuität.	k.A.	Wissenschaftsmanagement, Jg. 14, Heft 2 (März/April), S. 30-32 (2008)	k.A. / k.A.
Münch, Richard	2010	Der Monopolmechanismus in der Wissenschaft - Auf den Schultern von Robert K. Merton	Matthäus-Effekt, Soziale Mechanismen, New Public Management, Ranking, unternehmerische universität	Es wird gezeigt, dass die hierarchisierung von Fachzeitschriften nach ihrem Impact den Monopolmechanismus in der Wissenschaft durch Prozesse der materiellen Produktion von Marktmacht und der symbolischen Konstruktion von exklusivität befördert.	Literaturstudie sowie Auswertung von DFG- und anderen Sekundär-Daten	Unter der Herrschaft des Shanghai-Rankings entsteht daraus eine zirkuläre Akkumulation von materiellem und symbolischem Kapital durch eine exklusive Klasse global dominanter universitäten. Der Wettbewerb von Forschern um Anerkennung durch die wissenschaftliche gemeinschaft für ihre beiträge zum erkenntnisfortschritt als globales Kollektivgut wird durch den Wettbewerb unternehmerischer universitäten um Forscher, Studierende und Forschungsgelder als Rendite generierende Ressourcen kolonisiert. Den daraus folgenden Tendenzen der Schließung der Wissensevolution können Maßnahmen entgegenwirken, die auf die Pluralität von Instanzen der Qualitätssicherung, auf den Aufbau von gegenmacht gegen vorhandene Macht in einem System von „checks and balances“ und auf Spielräume für methodologische Anarchie zielen.	k.A.	Berliner Journal für Soziologie, Vol. 20, Issue 3, pp. 341-370 (2010)	k.A. / k.A.
Nicholls, Miles G. and Cargill, Barbara J.	2011	Establishing best practice university research funding strategies using mixed-mode modelling	university research funding, mixed-mode modelling, strategy evaluation	This paper develops a model representing the university research funding problem under a performance based research funding (PBRF) scheme during the ‘lead-upperiod’ using a mixed-mode modelling approach (involving soft and hard models)and suggests a solution heuristic.	Benchmarking, an Expert Panel (operating on panel consensus) and subjective strategy impact evaluation are the key tools used. Potential actions constituting strategy (qualitylead) together with the constraint groups involved and potential impact on the objective function for an academic unit at commencement of year.	The resultant model facilitates the development of ‘best practice’ strategies to assist in raising the level of research quality and participation, thus placing the university (or academic unit) in the best possible position for facing the final hurdle,the formal research assessment process. This assessment process constitutes the ‘positioning problem’, for which models already exist to assist individual universities to adopt the most favourable strategy. However, the ultimate position of the university depends on the results from the lead-up period. The suggested model facilitates ‘research enhancement’ strategy formulation, evaluation and revision and actively involves the researchers themselves.	It has, in effect, ‘democratised’ research management, a necessary precondition for the still greater increases in quality and participation required in the future.	OMEGA-INTERNATIONAL JOURNAL OF MANAGEMENT SCIENCE, Vol. 39, Issue 2, pp. 214-225 (2011)	B / 4
Perkmann, Markus; King, Zella and Pavellin, Stephen	2011	Engaging excellence? Effects of faculty quality on university engagement with industry	university–industry relations, faculty quality, collaborative research, contract research, academic consulting, technology transfer, academic entrepreneurship, commercialization	Previous research has predominantly found a positive relationship between academics’ research quality and their commercialization activities. Here we use industry involvement measures that are broader than commercialization and indicate actual collaboration, i.e. collaborative research, contract research and consulting. We hypothesise that the relationship between faculty quality and industry engagement differs across disciplines, depending on complementarities between industrial and academic work, and resource requirements.	Using a dataset covering all UK universities (our dataset includes the complete population of 164 higher education institutions (HEIs) in the UK in 2003/04. In this paper, we refer to all HEIs as universities except when directly reporting responses to a question in the HEBCI survey) ; results of the regressions for the various dependent variables. The number of observations in the regressions was 132.	We find that in technology-oriented disciplines, departmental faculty quality is positively related to industry involvement. In the medical and biological sciences we find a positive effect of departmental faculty quality but establish that this does not apply to star scientists. In the social sciences, we find some support for a negative relationship between faculty quality and particularly the more applied forms of industry involvement.	First, university-level analysis necessarily yields less fine-grained results than would individual or department-level analysis. Our dependent variables only measure income, not necessarily industry involvement. A third limitation is that our data do not allow us to observe whether faculty quality is associated with the ability to engage effectively with industry.	Research Policy, Vol. 40, Issue 4, pp. 539-552 (2011)	A / 10
Pitsoulis, Athanassios and Schnellenbach, Jan	2012	On property rights and incentives in academic publishing	academic journals, scientific publishing, peer review policy , property rights	The peer review system in academic publishing performs two important functions by screening a manuscript for its quality, and by helping to further improve an author's work. However, it often fails to perform these functions in a satisfactory manner. We argue that property rights theory can be fruitfully applied to understand these shortcomings, and to develop reform proposals. The present paper discusses the incentive-problems in journal peer review from an institutional economics perspective, arguing that the incentives of both authors and reviewers to fully exploit a manuscript's potential depend on their property rights.	Peer review system / property rights theory.	Certainly, intensive competition between at least the high-impact journals may result in imitations of successful innovations in that field. The “as is”-proposal appears to be a step in the right direction. From a property rights-theoretic perspective it can be expected to result in a reduction of the sometimes excessive demand for reviews and thus in an increase of the proportion of high-potential reviewers, who have systematically higher opportunity costs than the rest.	Limited to economical perspective. Other perspectives should be considered in order to gain a holistic review.	Research Policy, Vol. 41, Issue 8, pp. 1440-1447 (2012)	A / 1
Ponomariov, Branco L. and Boardman, P. Craig	2010	Influencing scientists' collaboration and productivity patterns through new institutions: University research centers and scientific and technical human capital	university research center, research collaboration, bibliometrics, science and technology policy	This paper analyzes the effect of university research centers on the productivity and collaboration patterns of university faculty. In this paper, we measure the productivity and collaboration patterns of university researchers affiliated with a relatively large-scale and “mature” university research center to discern the effects, if any, of the center mechanism on individual scientists and engineers.	Based on an analysis of longitudinal bibliometric data (The resulting final panel data set consists of 777 observations (i.e., faculty-year records), of which 446 have at least one or more publication records (i.e., given that not all faculty publish in all years, 446 is the number of person-year records characterized with at least one publication). Since the analysis is based on panel data, and since all of the dependent variables are count variables, we analyze this data using random-effects.	The results from this case study demonstrate affiliation with the center to be effective at enhancing overall productivity as well as at facilitating cross-discipline, cross-sector, and inter-institutional productivity and collaborations.	Future research on the effects of the center mechanism on the conduct of scientists will benefit from better data, for sets of centers, either for the same centers program or across programs for the same agency. Such research would be greatly facilitated by uniform requirements from the sponsoring agencies for collecting appropriately structured bibliometric data. Future research could also benefit by new research questions. An important issue that needs to be addressed relates to how durable or lasting are center effects.	Research Policy, Vol. 39, Issue 5, pp. 613-624 (2010)	A / 23
Print, Murray and Hattie, John.	1997	Measuring quality in universities: An approach to weighting research productivity	education, research productivity, quality, universities	The aim of the study is to demonstrate, via the use of the discipline of Education, a procedure to identify and weight the importance of various indicators of research productivity which in turn have become significant components in determining quality within and between universities.	The methodology allows for the identification of indicators that are most important, and ascertains if there are differences among academics as to the relative weighting of the various research indicators. Highly valued indicators of research productivity amongst the Education academics were refereed journal articles, peer reviewed books, and major competitive research grants.	Refereeing was critical in the determination of quality in research productivity, and the findings generalized across many academics regardless of their own personal productivity.	It is recommended that the methodology can serve to determine the tacit weights that academics within and across disciplines attach to various research products. At least, this method makes academics and administrators aware of the weightings they are actually using when making decisions about the quality of academic departments.	Higher Education, Vol. 33, Issue 4, pp. 453-469 (1997)	C / 15

Ramos-Vielba, Irene and Fernandez-Esquinas, Manuel	2012	Beneath the tip of the iceberg: exploring the multiple forms of university-industry linkages	university-industry relationships, knowledge transfer, intellectual property rights, regional university system	This article focuses on the wide variety of channels through which the process of knowledge transfer occurs. The overall objective is to show the complexity of relationships between researchers and firms in a university system, and to identify some specific factors that influence such interactions.	Our case study involves a face-to-face survey of 765 heads of research teams in a regional system to contrast the multiple forms of university–industry collaborative linkages. We apply a factor analysis to identify correlations and underlying dimensions. Subsequently, a conglomerate analysis enables us to detect homogeneous clusters of research teams.	The results confirm that knowledge transfer processes between universities and industry clearly occur through a variety of mechanisms, revealing differences in the extent to which research teams engage in such linkages. There are, therefore, high levels of heterogeneity in terms of the involvement of universities with the productive environment. We show that for a majority of universities the thrust of their collaborative experiences is devoted to tacit knowledge rather than to intellectual property rights. Researchers actively engage in the provision of different services to firms such as consulting work, commissioned or joint research projects, and human resources training. Research teams also participate in non-academic knowledge dissemination and informal networking.	It is important to recognise that a variety of different types of interactions contribute to increased absorptive capacity in specific industries because they generate long-term relations of trust that are associated with a variety of different collaborative experiences. There is still a clear need for knowing more about how stimuli operate within academia (McLellan et al. 2006). That would facilitate the (always complicated) design of a governance structure that creates the right incentives for academics to improve knowledge transfer (Geuna and Muscio 2009).	Higher Education, Vol. 64, Issue 2, pp. 237-265 (2012)	C / 0
Rasmussen, Einar and Borch, Odd Jar	2010	University capabilities in facilitating entrepreneurship: A longitudinal study of spin-off ventures at mid-range universities	academic entrepreneurship, technology transfer, university capabilities, university spin-offs, venture-formation process	This paper investigated how universities facilitate the process of spin-off venture formation based on academic research. Building on a capability perspective, we add to the literature on university characteristics and resources by exploring how the university context impacts the entrepreneurial process. We based our study on two mid-range universities and followed the start-up process of four spin-off ventures.	Data triangulation including several sources of data was used to map out the situation and critical events prior to and during the development of the USOs. Secondary data from the universities were collected through documentary sources such as strategy plans, annual reports, and web pages. Primary data from each university were collected through visits, conversations, and interviews over a 4-year period at University A and a 2-year period at University B. Primary data from the USO projects were collected in each case by 6 to 16 personal interviews conducted over a 12–15-month period beginning in the spring of 2004. Longitudinal study: From the data, we identified critical characteristics and events that influenced how the USO process emerged and developed in the university context. To derive theoretical explanations for the processes observed, we identified observations that matched theoretical concepts.	Based on the results of our longitudinal study, we propose a set of three university capabilities that facilitate the venture-formation process: (1) creating new paths of action, (2) balancing both academic and commercial interests, and (3) integrating new resources. Each capability is particularly important for specific phases in the venturing process. Our findings suggest that these capabilities are dependent on prior spin-off experience and reside within several actors both inside and outside of the university. Furthermore, universities with weaknesses in the identified areas can take strategic action to develop these capabilities to some degree.	More research using larger samples of USOs and universities is needed to confirm these capabilities and measure whether they are associated with a higher number of USOs and the subsequent growth of these firms. In particular, more longitudinal research is needed to be able to draw conclusions from causal inferences (Narayanan et al., 2009). Our study was limited to the initial phases of the USO process, which is arguably where the niversity context has the most impact. Therefore, future studies should not only treat the university context as endogenous to the USO process but also address the changing role of the university context throughout the USO process. Eisenhardt and Martin (2000) suggest that the capabilities of an organization are evolutionary. As a result, many characteristics of the university capabilities may be very difficult to operationalize, and how these capabilities are created and developed warrants further study.	Research Policy, Vol. 39, Issue 5, pp. 602-612 (2010)	A / 16
Rothaermel, Frank T.; Agung, Shanti D. and Jiang, Lin	2007	University entrepreneurship: a taxonomy of the literature	entrepreneurial research, productivity of technology transfer, networks, innovation	Since the literature is also fairly fragmented, however, we submit that it is time to take stock of the current knowledge to provide directions for future research and guideposts for policy makers.	To accomplish this, we present an unusually comprehensive and detailed literature analysis of the stream of research on university entrepreneurship, now encompassing 173 articles published in a variety of academic journals. Four major research streams emerge in this area of study: (i) entrepreneurial research university, (ii) productivity of technology transfer offices, (iii) new firm creation, and (iv) environmental context including networks of innovation.	We inductively derive a framework describing the dynamic process of university entrepreneurship based on a synthesis of the literature.	We submit that this framework is useful in guiding future research on this important, yet complex and under-researched topic.	Industrial and Corporate Change, Vol. 16, Number 4, pp. 691-791 (2007)	C / 208
Salter, Ammon and Martin, Ben R.	2001	The economic benefits of publicly funded basic research: a critical review	economic benefits, basic research, government funding	This article critically reviews the literature on the economic benefits of publicly funded basic research. In that literature, three main methodological approaches have been adopted — econometric studies, surveys and case studies.	Literaturreview	From the literature based on surveys and on case studies, it is clear that the benefits from public investment in basic research can take a variety of forms. We classify these into six main categories, reviewing the evidence on the nature and extent of each type (The first category relates to basic research as a source of new useful knowledge, while the second consists of new instrumentation and methodologies, Thirdly, there are the skills developed by those involved in carrying out basic research, especially graduate students, which can also lead to substantial economic benefits as individuals move on from basic research, carrying with them both codified and tacit knowledge. A fourth type of benefit stems from the fact that participation in basic research is essential if one is to obtain access to national and international networks of experts and information. Fifthly, basic research may be especially good at developing the ability to tackle and solve complex problems. Basic research may lead to the creation of ‘spin-off’ companies, where academics transfer their skills, tacit knowledge, problem-solving abilities and so on directly into a commercial environment). The relative importance of these different forms of benefit apparently varies with scientific field, technology and industrial sector. Consequently, no simple model of the economic benefits from basic research is possible.	Additional research is needed to better define and understand these differences. This limitation in current science policy research should not be seen as implying a need for less government funding of science. Rather, it indicates that public funding for basic research is, like many areas of government spending e.g. defence, not easy to justify solely in terms of measurable economic benefits.	Research Policy, Vol. 30, Issue 3, pp. 509-532 (2001)	A / 227
Schartinger, Doris; Rammer, Christian; Fischer, Manfred and Fröhlich, Josef	2002	Knowledge interactions between universities and industry in Austria: sectoral patterns and determinants	knowledge interactions, innovation systems, university-industry relations	The paper attempts to measure the sectoral pattern for different types of knowledge interactions and to explore the determinants of knowledge interaction between different fields of research and sectors of economic activity in Austria.	The analysis is based on a comprehensive data set on various types of knowledge interactions between university departments and private firms in Austria in the 1990s. A methodology for interaction models is used in order to identify determinants of knowledge interactions.	The empirical results indicate that the intensity of knowledge interactions does not follow a simple sectoral pattern (assuming intense interactions between high-tech industries and firm-orientated technical sciences and low interactions in humanities and low-tech industries). There are some results which may be viewed as general patterns of knowledge interaction between university and industry. Apparently, universities and the industry use a variety of channels in order to transfer knowledge. The channels vary in the intensity of personal relations, in the types of knowledge transferred and in the direction of the knowledge flow.	A restriction of the analysis of industry–university relations to only a few types of channels may produce misleading results as there are significant differences in the orientation on certain types of interaction by industrial sectors and fields of science. While there is no doubt that knowledge exchange in direct research collaboration is one of the most effective transfer channels, other types of interaction should not be underestimated in their role in innovation processes which demand different types of knowledge. In the design of research and technology policy, barriers to industry–university interactions in other areas than direct research cooperation should be taken into account and addressed in effective ways as well.	Research Policy, Vol. 31, Issue 3, pp. 303-328 (2002)	A / 121

Sharma, Manu; Kumar, Uma and Lalande, Luc	2006	Role of university technology transfer offices in university technology commercialization: case study of the Carleton University foundry program	University, technology transfer, Carleton University	In this paper, we take a look at the established UTC process, the benefits of UTC, the role of TTOs in UTC and the state of research on UTC in North America. A debate about the role of the TTOs is also initiated. This paper discusses the model for a non traditional university technology transfer program developed in Carleton University and highlights how this program, through its unique structure and its support for innovation has been highly successful in stimulating the transfer of research and technologies from Carleton University into commercial applications.	Through a case study of the Carleton University Foundry program.	Innovation sustained by this free flow of ideas has always been the driver for commercializable ideas coming out of the university. The analysis of the UTC literature firmly establishes the fact that UTC needs to be understood in its broader context In keeping with the broader objective of the UTC, success would have to be a measure of parameters such as the influence on the local and regional economy, transfer of best practices regionally, nationally as well as internationally, the number of jobs created, development and sustenance of an entrepreneurial culture and the involvement of the local business community. This will have to be done in such a way that a proper balance between the basic objectives of the university, and the broader objective of dissemination of university research for the good of the wider community is maintained. It is the individual TTOs that have to come up with innovative solutions and take a leading role in helping support the knowledge-economy dictated needs of their researchers and institutions. The authors firmly believe that TTOs should practice what they preach about making innovation happen. The need of the hour, is for all such UTC programs/TTO operations to come together and help foster a new TTO culture that besides addressing the UTC needs of the universities also treats nurturing of innovation and entrepreneurship as its core value.	Basic research into the mechanisms and characteristics of individual TTOs would definitely give us a better insight into some of the unexplored aspects of UTC (as well as some of our unanswered questions). Further work on models such as the one adopted by the Foundry program would definitely be an interesting contribution to this field.	Journal of Services Research, Vol. 6, Special Issue (July, 2006), pp. 109-139 (2006)	A / k.A.
Smith, Erica and Smith, Andrew	2012	Buying-out teaching for research: the views of academics and their managers	research, academic work, buying-out, teaching relief	This paper reports on the practice of buying-out teaching to create time for research.	The research project was undertaken through a case study at one university. Case studies are valuable in under-researched areas as they allow investigation into the important issues while also accounting for the importance of context (Yin 1994). Case studies provide depth of analysis and investigation of ambiguities (Flyvberg 2006). The case study was mixed method and involved four separate components, and the fieldwork took place over a period of 15 months. Ethics approval was gained from the University's Ethics Committee. A mixed-method approach was selected, in order to capture both practices and the reasons for practices; as Yin (1994) states, qualitative methods investigate the 'how' and 'why' issues, while 'what' issues are addressed by quantitative methods. The four-pronged method also enabled several points of view to be accessed: those of academics, their managers and senior managers at the university.	We found that while eligible academics did buy out teaching by employing casual staff, most of them worried about the potential effects on teaching quality and students' learning. Heads of School were more sanguine about possible effects on teaching. Decision making by academics about whether to buy out teaching, and by Heads of School about whether to allow it in particular cases, took account of a number of factors. They were less likely to use funds to buy out face to face teaching activities or subject coordination. Research active academics would also tend to put in place safeguard mechanisms to make sure that the quality of teaching was not being compromised. These safeguards included moderation of marking, and meeting regularly with casual teaching or marking staff. The paper suggests that clearer policies need to be instituted in this area; academics were unsure what buying-out was allowed or acceptable, and would benefit from more discussion of the practice.	Any conclusions drawn from the data must acknowledge that the study was confined to one institution, and therefore cannot be claimed to be representative.	Higher Education, Vol. 63, Issue 4, pp. 455-472 (2012)	C / 1
Tether, Bruce S. and Tajar, Abdelouahid	2008	Beyond industry-university links: Sourcing knowledge for innovation from consultants, private research organisations and the public science-base	open innovation, specialist knowledge, collaboration, social capital, absorptive capacity	This paper explores the use of specialist knowledge providers as sources of information in the innovation activities of manufacturing and service firms.	The dataset (n 3996) is used as a simple sample of firms, and no attempt will be made to adjust the dataset to the population of firms in the UK. To analyse the use by firms of SKPs we estimated ordered logistic regressions; use of a joint estimation technique is appropriate, and we therefore estimated trivariate probit models in which each of the three types of SKP is represented by a dummy variable	We find, as anticipated, that amongst other factors specialist knowledge providers are more likely to be engaged by firms with more open approaches to innovation, those with high levels of absorptive capacity, those with greater social capital and networking capabilities, aswell as by those with deeper commitments to innovation. Overall, the use of specialist knowledge providers tends to complement firms' own internal innovation activities and tocomplement other external sources of knowledge. Moreover, the individual types of specialist knowledge providers tend to complement rather than substitute for one another. Beyond this we find significant differences in the types of specialist knowledge providers used by manufacturing and service firms. Although service firms are more likely than manufacturers to use specialist knowledge providers, they are more likely to engage consultants, whilst their links with research-based organisations, including the public science-base, are weaker. We ask whether there is a case for increasing the extent to whichthe public science-base undertakes activities that are relevant to innovation in the services.	The data is crosssectional, and therefore our models find only associations between the dependent and independent variables. This presents the usual problems of endogeneity and inferring causation. Secondly, the study relates to only one country and one time period. Clearly further comparable studies in time and space would be welcome. A third limitation is what is meant by the different types of SKP, and consultants in particular. We do not know what types of consultants were used, e.g., management, technical, legal, financial, etc. It would certainly be interesting to know more about the types of consultants used by the firms, but this is not possible with the existing CIS data.	Research Policy, Vol. 37, Issue 6-7, pp. 1079-1095 (2008)	A / 71
Tijssen, Rober J.W.	2004	Is the commercialisation of scientific research affecting the production of public knowledge? Global trends in the output of corporate research articles	corporate research, research partnerships, knowledge protection and dissemination, bio-pharmaceuticals, semiconductors	Has this development significantly affected industry's basic research and interactions with research communities in the public sector? This paper examines the global trends in an underdeveloped source of information on corporate science: their research articles published in the international scientific and technical journals.	Statistical analysis of some 290,000 corporate research articles published in 1996–2001 indicate that, contrary to large increases in patenting and growth in patent citations to research literature, the numbers of research articles that list author affiliate addresses in the corporate sector have declined steadily, especially for those articles authored exclusively by industrial researchers.	More detailed analysis of trends in the bio-pharmaceuticalssector and semi conductors sector show sector-specific publication trends and patterns related to specifics of their innovation processes. Overall,these observations provide factual evidence indicating that corporate research is in an on-going process of structural change characterised by a stronger emphasis on the appropriation and commercialisation of in-house research results.	Clearly, a 6 years time-span is not enough to detect structural global changes and trends with any degree of certainly. Indeed, companies are most likely also trying to minimise research costs by contracting out for work rather than conducting in-house research. Less funding for in-house exploratory research, and the downsizing of industrial research labs, would account for the significant decrease of corporate research articles in the open literature, especially the dramatic decline in publication rates of papers where companies are the sole creator of new scientific knowledge, as well as the significant drops in inter-company co-publications.	Research Policy, Vol. 33, Issue 5, pp. 709-733 (2004)	A / 33
Titscher, Irene	2008	Das Recht zur Veröffentlichung im Spannungsverhältnis zur Drittmittelforschung	Analogiefähigkeit, Aufgriffsrecht, Vergütungsanspruch, Amtsforschung, Veröffentlichungs-recht, Verwertungs-rechte, Drittmittel-forschung, Wissenschafts-freiheit	Immer öfter finden sich Wissenschaftler im Bereich der Drittmittelforschung mit der umstrittenen Rechtsmeinung ihrer Auftraggeber konfrontiert, die Verwertungsrechte an wissenschaftlichen Arbeiten stünden diesen zu. Inwieweit dies als zutreffend angesehen werden kann sowie die Beziehung zu dem im Universitätsgesetz verankerten Recht des Wissenschaftlers auf Veröffentlichung, soll den Untersuchungsgegenstand dieses Beitrages bilden.	Keine Emirie; Expertenbeitrag	Das Veröffentlichungsrecht ist durch staatliche Eingriffe unbeschränkbar, findet jedoch in der Drittmittelforschung, die für private Auftraggeber stattfindet, nicht Anwendung. In der Drittmittelforschung, die Arbeitspflicht des Wissenschaftlers ist, werden Werke für Auftraggeber geschaffen. Diese Werke stehen der Universität als Arbeitgeberin zu, die diese bei einem Forschungsauftrag nach § 27 UG 2002 an den Auftraggeber zu übertragen hat. Das Aufgriffsrecht nach § 106 Abs 2 und 3 UG 2002 an Diensterfindungen ist nicht analog auf urheberrechtliche Werke anwendbar, da nur in Erfüllung dienstlicher Pflichten geschaffene Werke nach Urheberrecht in der Drittmittelforschung der Universität zustehen und das patentrechtliche Aufgriffsrecht darüber hinausgeht. Steht in der „Amtsforschung" der Universität das Aufgriffsrecht an einer Erfindung zu, die mit urheberrechtlichen Werken in Konnex steht, so ist aus der Treuepflicht des Wissenschaftlers abzuleiten, dass er mit seiner Veröffentlichung so lang zuzuwarten hat, wie die Universität zur Vornahme einer Patentanmeldung braucht, um die Erfindung verwerten zu können.	k.A.	Zeitschrift für Hochschul-recht, Hochschulmanagement und Hochschulpolitik - zfhr, Vol. 7, Issue 6, pp. 171-176 (2008)	k.A. / k.A.

van Burg, Elco; Romme, A. Georges; Gilsing, Victor A. and Reymen, Isabelle	2008	Creating university spin-offs: A science-based design perspective	university spin-offs, research, entrepreneurship	This article adopts a science-based design approach to connect scholarly research with the pragmatics of effectively creating university spin-offs. This approach serves to link the practice of university spin-off creation, via design principles, to the scholarly knowledge in this area.	As such, science-based design promotes the interplay between emergent and deliberate design processes. This framework is used to develop a set of design principles that are practice based as well as grounded in the existing body of research on university spin-offs. A casestudy of spin-off creation at a Dutch university illustrates the interplay between initial processes characterized by emergent design and the subsequent process that was more deliberate in nature. The case study in this article serves to illustrate both emergent and deliberate design dimensions and, in particular, the pivotal role of design principles in the interplay between both dimensions. The study draws on data collected in the period 2005–2007. The data were gathered in two different roles. One of the authors of this article (Romme) was involved as one of the key agents in the redesign and implementation processes (cf. participant-observer data). The other authors performed semistructured interviews and collected documentary data from the usual outsider perspective. The case-study approach in this article is a clinical rather than descriptive one. The clinical nature of the case study arises from its dual purpose to improve the spin-off performance of the incumbent university as well as to analyze and understand the underlying processes in this case.	This case study also suggests there are two fundamentally different phases in building capacity for university spin-off creation. First, an infrastructure for spin-off creation (including a collaborative network of investors, managers and advisors) is developed that then enables support activities to individual spin-off ventures. This study concludes that to build and increase capacity for creating spin-offs, universities should do the following: (1) create university-wide awareness of entrepreneurship opportunities, stimulate the development of entrepreneurial ideas, and subsequently screen entrepreneurs and ideas by programs targeted at students and academic staff; (2) support start-up teams in composing and learning the right mix of venturing skills and knowledge by providing access to advice, coaching, and training; (3) help starters in obtaining access to resources and developing their social capital by creating a collaborative network organization of investors, managers, and advisors; (4) set clear and supportive rules and procedures that regulate the university spin-off process, enhance fair treatment of involved parties, and separate spin-off processes from academic research and teaching; and (5) shape a university culture that reinforces academic entrepreneurship by creating norms and exemplars that motivate entrepreneurial behavior.	The case study suggests that emergent design processes can be essential in getting started as well as in experimenting with potential solutions. It also shows that a deliberate design approach can assure that the process stays on track by safeguarding and improving it, particularly by codifying design solutions and principles. More specifically, the set of design principles resulting from this study provides a benchmark for any future work that deliberately links efforts to increase spin-off creation capacity to scholarly research in this area. A limitation of the approach taken in this article is its restriction to a single case. The single-case-study approach provides opportunities to develop an in-depth understanding of the process of spin-off formation at a particular university, but it limits the generalizability of the study's findings. Moreover, future developments in the institutional context of universities may undermine the findings and principles arising from this study. The case study also produced two design principles that need further development. The design principle regarding supportive rules and procedures is not yet grounded in the university spin-off literature. A specific challenge is to decontextualize some of the issues arising from the TU/e case and to adapt them in such a way that they fit with another institutional context.	The Journal of Product Innovation Management, Vol. 25, Issue 2, pp. 114-128 (2008)	A / 21
van Gils, Maarten; Vissers, Geert and de Wit, Jan	2009	Selecting the right channel for knowledge transfer between industry and science	research and development, knowledge transfer, Europe, innovation	This paper aims to explore the relationship between the types of R&D-activities within science-based firms and the knowledge transfer channels used for industry-science collaboration. Rooted in a contingency approach, it seeks to identify patterns in the organization of knowledge transfer and to disclose ways that may support R&D-managers in achieving effective knowledge transfer. The paper is one of the first studies that empirically assesses the relationship between the types of R&D-activities in firms and the knowledge transfer channels that are used for industry-science collaboration.	The paper is an exploratory study in order to obtain a deep understanding of the relationship. At first, both the types of R&D-activity and the knowledge transfer channels were conceptualized based on an extensive literature review. Second, data were collected by means of semi-structured interviews with 17 (assistant) R&D-managers of ten large European chemical firms.	The analysis suggests that almost each of the knowledge transfer channels used for industry-science collaboration has a more or less unique link to a specific type of R&D-activity. An empirically based model is developed that visualizes the linkages. In addition, explanations for observed links are proposed.	The empirical analysis reported focuses on multinational firms in the science-based European chemical industry, because they invest heavily in R&D and are hence more interested in collaboration with scientific partners. Further research is needed to determine the model's applicability in other empirical settings, both within and outside science-based industries.	European Journal of Innovation Management, Vol. 12, Issue 4, pp. 492-511 (2009)	D / k.A.
van Looy, Bart; Ranga, Marina; Callaert, Julie; Debackere, Koenraad and Zimmermann, Edwin	2004	Combining entrepreneurial and scientific performance in academia: towards a compounded and reciprocal Matthew-effect?	knowledge interactions, inovation systems, university-industry relations	The increase of entrepreneurial activity within academia has raised concerns that the research orientation of universities might become 'contaminated' by the application-oriented needs of industry. Empirical evidence on this concern is scarce and ambiguous. We examine whether entrepreneurial and scientific performance in academia can be reconciled.	Empirical research, analysis. The sample used for this analysis consists of 14 LRD divisions, 8 of which are related to the Faculty of Applied Sciences. ANOVA (analysis of variance) results with regard to influence of discipline and division membership on number of publications. ANOVA to assess the impact of discipline, division membership and the nature of the publications on the total amount of publications.	Our empirical findings (KU Leuven, Belgium) suggest that both activities do not hamper each other; engagement in entrepreneurial activities coincides with increased publication outputs, without affecting the nature of the publications involved. As resources increase, this interaction becomes more significant, pointing towards a Matthew-effect. From these results, we tend to conclude that it is indeed feasible to organize both scientific and entrepreneurial activities, without one jeopardizing the other.	Our findings also point out several directions for further research. First of all, they need to be com-plemented with research efforts aimed at 'external' validation, i.e. extrapolating beyond the KU Leu-ven boundaries, though using the same finegrained type of data as applied within this analysis. Such complementary analysis's are needed to confirm the relevancy and robustness of the suggestions made with respect to the 'compounded' Matthew-effect spanning scientific and entrepreneurial activities. Also, it can be observed that our analysis implied research divisions active within the domain of more exact sciences; the question can be raised—and hence examined—whether the same dynamics can be observed within the social sciences. Additional questions on whether the content and especially the conclusions of basic science papers, are at all affected by more applied and commercially driven activities could be raised, especially when future patent applications may be at stake. Such complementary questions imply an in depth content analysis of article abstracts and could spur more nuanced conclusions on the skewing problem. Another useful addition to our analysis is the use of other indicators for entrepreneurial performance instead of the mere execution of contract research.	Research Policy, Vol. 33, Issue 3, pp. 425-441 (2004)	A / 103
van Looy, Bart; Callaert, Julie; Debackere, Koenraad	2006	Publication and patent behavior of academic researchers: Conflicting, reinforcing or merely co-existing?	knowledge interactions, university-industry relations, academic inventors	In this contribution, we examine whether the publication behavior of academic inventors (at K.U. Leuven) differs from their colleagues (non-inventors) working within similar fields of research.	A straightforward paired sample t-test for total numbers of (SCIE) publications inventors/non-inventors ($t = 2726$, d.f. = 31; $p = 0.01$); ANOVA results: difference in terms of publication output (year) between inventors and controls acting as dependent variable; relationship between the nature of the publications and the presence or absence of 'inventorship' was examined for the total group by means of a χ-square test.	Firstly, inventors publish significantly more than their colleagues who work in similar fields and who have similar career characteristics. Inventors tend to publish more than non-inventors, even years before the first inventive, patenting activity is observed. At the same time, it is apparent that involvement in patenting activities increases the publication difference in favor of inventors. Inventors publish more in technology-oriented journals of a basic nature. Hence, the results from our data analysis do not confirm the presence of a skewing problem in terms of an alleged shift of publication output towards the more technological or applied end of the publication spectrum at the expense of more scientific or basic-oriented publications. Rather, our findings support Owen-Smith's (2003) 'hybrid regime' view of commercial and academic activities, where achievement in one realm is in part dependent on success in the other.	It is clear that many tensions and problems arise in the current transformation taking place across the university landscape. As outlined by Nelson (2004), this transformation raises important questions concerning the openness of the scientific 'enterprise'. While our findings reveal that reconciliation between different activity realms appears feasible in this particular university at the level of individual faculty, increasing our understanding of how such positive effects unfold and under what conditions is an issue that should remain high on our research agendas.	Research Policy, Vol. 35, Issue 4, pp. 596-608 (2006)	A / 65

van Rijnsoever, Frank J.; Hessels, Laurens K. and Vandeberg, Rens L. J.	2008	A resource-based view on the interactions of university researchers	research collaboration, science-industry interaction, individual researcher, resource-based view	In this study we explain the use of different knowledge networks at the individual level from a resource-based perspective. This involves viewing networks as a resource that offers competitive advantages to an individual university researcher in terms of career development.	A survey was administered among the scientific employees working at Utrecht University. The response was 304 usable questionnaires. A linear mixed model was fitted with a random intercept to account for interdependencies within the departments.	Our results show that networking and career development are strongly related, but it is important to distinguish between different types of networks. Although networks on various levels (faculty, university, scientific, industrial) show strong correlations, we found three significant differences. First, networking within one's own faculty and with researchers from other universities stimulates careers, while interactions with industry do not. Second, during the course of an academic career a researcher's scientific network activity first rises, but then declines after about 20 years. Science–industry collaboration, however, continuously increases. Third, the personality trait 'global innovativeness' positively influences science–science interactions, but not science–industry interactions.	This study has limitations in terms of generalizability. First, the response rate of the survey is rather low. Second, we have only considered Utrecht University in our study.	Research Policy, Vol. 37, Issue 8, pp. 1255-1266 (2008)	A / 31
van Rijnsoever, Frank J. and Hessels, Laurens K.	2011	Factors associated with disciplinary and interdisciplinary research collaboration	interdisciplinarity, scientific career, academic rank, research collaboration	This study investigates what characteristics of researchers are associated with disciplinary and interdisciplinary research collaborations and what collaborations are most rewarding in different scientific disciplines. The research presented in this paper was motivated by claims (see National Academies, 2005) that interdisciplinary research is desirable for solving complex societal problems.	A survey was administered among the scientific employees working at Utrecht University in June 2006 (303 usable questionnaires). Data was binned into several ordinal categories. Because the dependent variable consists of ordinal categories, three ordinal regression models. Finally, to test the effects of interdisciplinary and disciplinary research collaboration on academic rank, an ordinal regression modelwasfitted, with the 'basic-strategic' variable interacting with the degree of disciplinary and interdisciplinary research collaboration. The other variables were added as controls.	Our results confirm that female scientists are more engaged in interdisciplinary research collaborations. Further, a scientist's years of research experience are positively related with both types of collaboration. Work experience in firms or governmental organizations increases the propensity of interdisciplinary collaborations, but decreases that of disciplinary collaborations. Disciplinary collaborations occur more frequent in basic disciplines; interdisciplinary collaborations more in strategic disciplines. We also found that in both types of disciplines, disciplinary collaborations contribute more to career development than interdisciplinary collaborations.	An important avenue for further research is to gain more insight into how researchers from the basic sciences can be triggered more to engage more into interdisciplinary research collaboration.	Research Policy Vol.40, Issue 3, pp. 463-472 (2011)	A / 18
Viner, Neil; Powell, Philip and Green, Rod	2004	Institutionalized biases in the award of research grants: a preliminary analysis revisiting the principle of accumulative advantage	peer review, bias, grants	Examine the extent to which those with most power to influence funding decisions are also those to whom most resource flows, and the implications of the observed distribution of resources for the legitimacy and hence authority of the process. Associations between success in securing grants and potential sources of advantage are explored, including membership of the peer review cadre, departmental standing, track record, gender and ethnicity.	Using grant submissions data to a UK Research Council. Using primary data drawn from the EPSRC management information system a 'most active group' (MAG) was defined as the group of heavy service users comprising individuals submitting five or more proposals to EPSRC, or receiving at least three funded grants from three or four submissions, over the period 1995–2001. The relationship between membership of the two main groups of the MAG and the sub-group Sybil and a number of other features was explored using Chi-square tests of association.	Success in securing grants is associated with several potential sources of advantage, suggesting that factors other than the quality of the research proposed influence outcomes. Differential access to these may contribute to the observed biases in the number of grants won against women and non-white groups. The data allow the conclusion to be drawn that resources do seem to flow disproportionately to those with power in the distribution process. Argues for recognition and talent for research leading to inclusion, but the differences in winning grants between college members and non-members in both Sybil and Sysiphus suggests there is direct advantage to participation in peer review, particularly when the previous history of involvement of Sybil members is considered such that they are more likely to be carried forward between cycles of college appointment. Frequent success amongst those who obtain grants is associated with a number of factors that may be viewed as conferring advantage. Association does not imply causation, but neither should it be assumed that this is the natural outcome of a process whereby the 'best' researchers accumulate advantages as a result of the quality of their ideas. To be disadvantaged may derive from direct bias against an individual or group, but it may also arise from a relative lack of an advantage enjoyed by others.	By testing the evidence against the models some insight may be gained; it may not be possible to prove the merit model holds, but any evidence of bias or that advantage does accumulate disproportionately to particular individuals proves its hold is not total. Such a conclusion raises questions as to the legitimacy of the process and acts as stimulus to further investigation and action. Further, the sample used in the NSF study was not representative, comprising a 50/50 mix of funded/not funded proposals from a single year.	Research Policy, Vol. 33, Issue 3, pp. 443-454 (2004)	A / 14
Wright, Mike; Clarysse, Bart; Lockett, Andy and Mirjam Knockaert	2008	Mid-range universities' linkages with industry: Knowledge types and the role of intermediaries	universit-industry linkage, university spin offs, licensing, technology transfer	We analyze how mid-range universities can contribute to industrial change through the transfer of tacit and codified knowledge in the areas of spin-offs; licensing and patents; contract research, consultancy and reach-out; and graduate and researcher mobility.	We use archival, survey and interview data relating to mid-range universities in mid-range environments in the UK, Belgium, Germany and Sweden.	Our findings suggest that mid-range universities primarily need to focus on generating world-class research and critical mass in areas of expertise, as well as developing different types of intermediaries. Only if sufficient critical mass is created, can a sound IP strategy be developed for the research department and eventually spin-offs become a possible outcome. Mid-range universities may, therefore, need to develop a portfolio of university–industry linkages both in terms of the scope of activities and the types of firms with which they interact. While licensing and patenting represent the transfer of codified knowledge, the development of collaborative contract research and consultancy may be mechanisms jointly to build tacit knowledge. We also show that different intermediaries have important roles to play in developing university-industry linkages for mid-range universities.	In order to obtain insights into the extent of these activities, the processes involved in developing these activities and the barriers faced, the study focuses on detailed analysis of a small number of cases.	Research Policy, Vol. 37, Issue 8, pp. 1205-1223 (2008)	A / 57
Youtie, Jan and Shapira, Philip	2008	Building an innovation hub: A case study of the transformation of university roles in regional technological and economic development	universities, regional innovation, tacit knowledge, boundary spanning	Examines how the role of the university has evolved from performing conventional research and education functions to serving as an innovation-promoting knowledge hub though the case of Georgia Institute of Technology (Georgia Tech). This case is discussed in the context of state efforts to shift the region from an agricultural to an industrial to an innovation-driven economy. Comparisons between Georgia Tech's experiences and those of university roles in selected other catch-up regions in the southern United States highlight the importance to the case of networked approaches, capacity building, technology-based entrepreneurial development, and local innovation system leadership. Insights on the transformation of universities and the challenges of fostering a similar transformation in regional economies are offered. This paper has suggested an evolution in the roles of universities from knowledge storehouse (mode 1) to knowledge factory (mode 2) to knowledge hub (mode 3).	Comparisons between Georgia Tech's experiences and those of university roles in selected other catch-up regions in the southern United States. Case study of the evolution of Georgia Tech as a knowledge hub. This focus on networked programmatic elements, capacity building, knowledge pool creation, and technology-based entrepreneurship has fostered the important transformation of Georgia Tech from a knowledge factory to an "animateur" of development.	We note that the university tends to accumulate roles. We do observe a general tendency across many advanced countries for universities to seek (or be pushed) towards greater linkages and relevance for innovation, particularly in regional contexts. In contrast to earlier modes, these knowledge-hub institutions not only accumulate and produce knowledge, but they also actively foster knowledge exchange, learning and innovation through new methods and the development of boundary-spanning activities. We note that university R&D, startups, and other knowledge-transfer programs are important, but by themselves may not be enough to turn around an innovation system. The Georgia case shows, universities are more likely to be able to address the problems and opportunities of their regions if they pursue active institutional engagement to generate and share human capital, knowledge, leadership and other resources. There are no clear-cut technical or financial solutions to these and other critical economic, societal, and environmental problems, a common theme is the need to develop new capabilities, including the capability to pursue informed joint actions involving multiple stakeholders targeted towards implementing innovative regional and local approaches.	Of course, this is a highly abstracted simplification.	Research Policy, Vol. 37, Issue 8, pp. 1188-1204 (2008)	A / 41

Yusuf, Shahid	2008	Intermediating knowledge exchange between universities and businesses	university-industry linkages, intermediaries, tacit knowledge, technology, licensing offices, knowledge integration, community	The papers in this special section describe and discuss various intermediary mechanisms that assist universities in transferring knowledge and aiding the process of innovation.	Describing and discussing various methods with the aid of literature.	It is in the leading universities and the universities with strong and widly recognized research specializations that can engage in substantial and mutually advantageous knowledge exhange with the industry.	No single recipe is clearly superior but examining a variety of experiences helps to highlight the strengths of specific intermediary processes and to identify some of their shortcomings. Our current understanding of the intermediation process is such that no precise formula can be defined. This will call for an appropriate balance among incenives for faculty and a matching allocation of resources. Government policies and public institutions can reinforce these incentives and ensure that key research universities not only build human capital but also contribute to industrial innovation. How such a balance can be struck is far from clear, but research is bringing us closer to effective policies for universities and governments.	Research Policy, Vol. 37, Issue 8, pp. 1167-1174 (2008)	A / 33