



UIC Technology Corner

Vol. 1 No. 2 Office of Technology Management (312) 996-7018

November 2001

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Inventorship

In the United States, a patent application must be filed in the name of the inventor and must be accompanied by an oath in which the applicant swears that the applicant believes himself or herself to be the original and first inventor of the claimed invention and acknowledges his or her duty to disclose information material to patentability. Failure to do so can invalidate the issued patent. Further, inventorship is linked to ownership of the patent and failure to identify the correct inventors can have serious consequences related to how the patent rights are exploited. In many contexts, inventors share in the royalties generated from the patent and, therefore, identifying inventorship is also financially important.

To determine inventorship, the first step is to clearly identify what the invention is. For patent purposes, an invention is that which is recited in the claims. Once claims have been defined, whoever made the invention as it is claimed can be more readily identified.

Inventing is a two-step process of conception and reduction to practice. Whoever conceived the invention is an inventor. *Burroughs Wellcome Co. v. Barr Lab.*, 40 F.3d 1223 (Fed. Cir. 1994). Conception has been defined as the formulation in the mind of an inventor of a definite and permanent idea of the complete and operative invention, as it is thereafter to be applied in practice. *Singh v. Brake*, 222 F.3d 1362 (Fed. Cir. 2000).

Inventing is complete when the invention is reduced to practice; i.e., made and tested and determined that it will work for its intended purpose or when a patent application is filed that describes the invention sufficiently to permit one of skill in the art to practice the invention. The invention can be complete even though experimentation

continues as when the concept of the invention has been proven, but experimentation is still needed to streamline the invention, or to make it commercially viable. If experimentation, especially experimental failure, reveals that the concept of the invention is faulty, then the invention is not considered to be complete. Those who make a significant contribution to reduction to practice can also be inventors. *Hitzeman v. Rutter*, 243 F.3d 1345 (Fed. Cir. 2001).

The invention can be the product of a single inventor or multiple inventors. Multiple inventors do *not* have to physically work together or even work at the same time. There just must be some collaboration between the inventors. Even if one inventor contributed the bulk of the invention and another inventor contributed only a small, but essential, component, they are both considered to be inventors. An individual is *not* an inventor if he or she:

- contributed an obvious element to the invention;
- contributed a reagent, cell line, or equipment used in or with the invention;
- suggested an idea without a way to implement the idea;
- only followed instructions in working on the invention or reducing it to practice;
- participated in consultations about the invention before or after conception of the invention;
- is the department head or supervisor of an inventor but did not actually contribute to the conception of the invention;
- provided the funds or laboratory space necessary to develop the invention but

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- did not actually contribute to the conception of the invention.

One way to determine inventorship is to ask the question, "If the idea of this person had not been contributed, would the invention exist, as it is claimed?" If a second individual could not have been replaced by just any comparably qualified individual because the work on the invention required an original, non-obvious mental element, then the person is an inventor.

So, what should you, as an applicant for a patent, do to help determine inventorship? Provide your patent attorney with as complete information as possible about the invention, and include any contribution of or by technicians, assistants, post docs, and students regarding the subject matter of the invention. With the help of your patent attorney, the legal question of inventorship may be ascertained.

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UIC in the News

A UIC engineering team is one of six winners of the Collegiate Inventors Competition, sponsored by the National Inventors Hall of Fame. The group developed a procedure to convert silicon carbide to a diamond powder that produces a coating for dynamic pump seals in automotive engines. Two materials engineering doctoral students, Sascha Welz and Daniel Ersoy, along with faculty advisors Michael McNallan and Yury Gogotsi, made up the engineering team.

UIC Chemistry professor David Crich, along with graduate student Santhosh Neelamkavil, have found a new way of performing a chemical conversion process that may have applications in the pharmaceutical industry as well as others. The technique modifies an easy to use but malodorous oxidation process

to convert alcohols into aldehydes and ketones. The result is an odorless chemical with a very high boiling point that allows it to be easy to recycle.



Above: Professor Krishna Shenai and Chancellor Sylvia Manning receive the patent paperwork from P&G's Jeffrey Hamner .

UIC gets powerful donation

Patents to energize batteries

10/17/01

Paul Francuch

Procter & Gamble formally donated to UIC Tuesday a trove of patents and technological research data that may efficiently double or triple battery life in cell phones, cameras and other portable electronic devices.

As the sole owner of what P&G calls Smart Power Management, UIC will benefit from all future revenues — potentially millions of dollars, P&G said — after the technology is developed, tested and commercialized.

The gift "includes all future rights to the current P&G Smart Power Management portfolio, both U.S. and foreign patents, as well as the intellectual property that P&G has already developed," said Jeffrey Hamner, P&G's manager of corporate research and development.

Because P&G can't commercialize all the patents it holds, it donates those not fitting its current product development. The Cincinnati-based consumer products company currently boasts an

international portfolio exceeding 27,000 patents.

P&G selected UIC to receive the Smart Power Management project because it coincides with the work of electrical and computer engineering professor Krishna Shenai.

Shenai was a private consultant to P&G in developing the technology, working with former P&G researcher and UIC graduate Ying Xu.

"P&G computer models showed it can work," said Shenai. "Now we have to take up the process and deliver the goods."

Existing battery technology is inefficient, especially when battery voltage is low, so consumers often discard batteries with nearly half the energy remaining. For example, when devices like cellular phones or laptop computers operate from battery power, they can't extract all the energy stored in the battery; under some conditions, up to 40 percent of the energy is left when it is discarded.

The technology donated to UIC should deliver power so efficiently that most of a battery's energy could be extracted, potentially tripling its usable life.

P&G's Corporate Research Division studied ways to use this technology in items ranging from battery-powered "smart" clothing fibers to grooming products adjustable to the personal needs of consumers. After a change in corporate strategy, the company selected Shenai and UIC as most likely to develop the technology.

Shenai is working on a charge pump power management chip with commercial potential for improving batteries used in consumer electronics products that bundle features and functions in a single device, such as laptop computers and PDAs. He adds that batteries managed by charge pump chips could be used in almost any device where weight is important — electronic tools carried by soldiers, for example, or a hearing aid powered by a solar cell in an eyeglass frame.

The P&G donation to UIC not only includes the intellectual property, but research funding and three years of patent maintenance fees. The donation includes semiconductor testing equipment for research use.

"This gift is truly unlike any other because it puts directly in our hands the tools to carry forward our multiple mission of teaching, research and service," said Chancellor Sylvia Manning.

All patents will be exclusively licensed to a startup company headed by Shenai called Empower Systems, Inc. Shenai will continue as a full-time UIC faculty member while operating Empower Systems, which will also be a teaching facility for graduate and undergraduate students.

Below: Katherine Gehl, Office of the Mayor, speaks at Tuesday's press conference as Chancellor Sylvia Manning and University of Illinois President James Stukel listen.

Photos: Grant Therkildsen



Welcome



Daniel F. Marselle, MS, MBA

Dan Marselle joined the Office of Technology Management (OTM) as Director, Pharmacy Intellectual Property in August 2001, and he is dedicated exclusively to UIC's College of

Pharmacy. Since the College now ranks second nationally among colleges of pharmacy in total NIH research funds, his position responds to the need to enhance the technology commercialization at the College. His role is to manage the existing portfolio of inventions and new disclosures, coordinate patent applications, and assist with licensing and technology development.

Dan has 20 years of business experience including consulting, long-range planning, project management, and business development. His most recent experience was for a top ten pharmaceutical company where his roles included strategic planning, communications, marketing, and advocate development.

Dan has a Bachelor of Science degree in Chemical Engineering from the Illinois Institute of Technology, a Master of Science degree in Chemical Engineering from the University of Wisconsin – Madison, and a Master of Business Administration from the University of Chicago.

Dan can be reached at 312- 996-6187 or marselle@uic.edu.



Lanny Feder, MS

Lanny Feder, Director, Engineering Intellectual Property, joined the Technology Management Office in February 2001. Lanny has extensive industrial experience in technology transfer, industrial liaison, research and development, technology marketing, technology management and process engineering.

Lanny is a Chemical Engineer with a bachelors degree from Northeastern University in Boston, MA where he received his degree under the cooperative plan of education and a masters degree from MIT's David H. Koch School of Chemical Engineering Practice.

UIC's College of Engineering which is growing significantly in reputation, faculty and the size of the research portfolio, has also been increasing the number of inventions developed by its

faculty and researchers. Responding to this and in support of the University's role in economic development, Lanny works with the faculty and researchers in the College of Engineering on all technology management issues including invention disclosures; protecting inventions through patents, trademarks and copyrights; identifying potential licensees; preparing and implementing marketing plans and negotiating technology licenses.

Lanny can be reached in 809 SEO in the College of Engineering. Phone: 312-413-5496, E-mail: Lfeder@uic.edu.



For further information on the technology transfer process at University of Illinois, contact the Office of Technology Management (312) 996-7018, or visit the [OTM website](#).

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