Role of Consulting in Teaching and Research

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- **Positive view of consulting:** Enhance your academic career by sharpening your professional skills in your area(s) of interest.
- Depending on your field, you can almost always learn something new and relevant to your field from consulting, provided you pick your projects carefully and do a good job with the project.
- **Negative view of consulting:** It’s “Moonlighting.”
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- Virtually all universities allow or encourage consulting both in the business and engineering schools, subject to certain rules and limits.
- Fundamental belief is that consulting experience will enhance classroom teaching and potentially lead to research.
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Example:

Major appliance & consumer electronic goods manufacturer
→ research grant (multi-floor facility layout)
→ summer consulting for graduate student
→ research publication + award-winning dissertation
   → commercial facility layout code
→ consulting project with commercial/school furniture manufacturer
→ term-project for senior-level facility planning course
→ consulting project with major Korean electronics manufacturer
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Example:

(Asst. Prof.) Major apparel manufacturer
  → consulting project
  → research grant
  → further research ideas
  → NSF Career Award
  → Publications
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- **Credibility in class**: effectiveness in teaching in Business (BBA, MBA) and Engineering (BSE, MSE/PhD) classes.

- **Anecdotes and short stories** (not formal case studies).

  “Around 1997, when P&G tried a variation of this particular approach to inventory control, they discovered that safety stock levels were overestimated because __________.”

  “We tried this particular algorithm in a multi-floor facility GE used to manufacture ________. Congestion due slow lifts forced us to take a closer look at them.”
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Another form of consulting: **Expert witness.**

- It can be very challenging and a unique experience. (Have you ever been deposed as an expert witness?)
- Chances are (99.99) it will not lead to a research grant, though you will learn and get a chance to put your knowledge to work provided it’s the right case.
- No matter what the attorney says, if you feel it’s a poor fit with your expertise, do not take the case. Often, you can refer the attorney to another person/organization who can help.
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Another form of consulting: **Expert witness**.

- Remember, in the **long-run**: If you are good under pressure, you can help others with your knowledge.
- If you don’t step up, people far weaker or less knowledgeable than you will be happy to take the witness stand for the attention and the money.
- It’s your decision but go very easy as an Assistant Professor.
- Given your area, do you think you’ll ever be asked to serve as an expert witness?
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Another form of consulting: **Expert witness**.

- Unique aspect: Since you get to see mistakes in such cases, it can be a tremendous learning experience, which you can share with your colleagues and students, after the case is settled or decided.

- Be very careful with privileged information and confidentiality.

- Be prepared to deal with the opposing side’s expert witness(es) and attorney(s).
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Some important things to remember:

• If you “mess up,” you’re on your own (the University will not provide you with legal representation).

• Make sure you have a disclaimer and warranties in the proposal.
  – Disclaimer to spell out that you cannot be held liable for any types of losses the company may incur as a result of using, or being unable to use, your recommendations.
  – In your warranty, assure the client that your conduct, your methods, and your recommendations will meet professional standards established for the IE/OR/MS profession.
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Some important things to remember:

• Do not over-commit but be prepared to deal with conflicting deadlines and schedules.

• Avoid COI best you can but look for research opportunities.

  — One consulting/research project led to a well-regarded paper and a dissertation that won two prestigious awards.

  — Another consulting project, led to a brand new problem not addressed in the literature before.
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Some important things to remember:

• When it makes sense, get your students involved. It can help the client (financially and/or with manpower) and it can be a big learning experience for your student.
  
  — Be careful with visa restrictions for international students. Can be done as curricular practical training provided certain conditions are met and the project enhances the student’s education.

  — It’s much better if the client pays your student directly, without the money going through you.
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Some important things to remember:

• If you decide to do consulting, pick your project very carefully. The project content, the client, the type of industry, their location, can all make a big difference in how much you can help them and what you learn from the engagement.

• Do not over-commit with respect to deliverables and with respect to timing. (Often the client needs the results “yesterday.”)
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Some important things to remember:

• Don’t pretend you know more than you do. When appropriate, admit lack of practical knowledge but do some learning on your own. Don’t be arrogant either.

• Unless it gives you a major tax advantage, or it reduces your liability (LLC), do not start your own consulting firm as a junior faculty member. That can wait; you can do it later.
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How to find a consulting project?

Local industry.

Find out who in your department answers the phone.

What does the department/university web site say?

- If you feel consulting is not for you, but you wish to enrich your lectures with real-world stories, and/or industrial relevance of your research is important to you, then you can subscribe to leading trade journal(s) in your field of interest. Example, Modern Materials Handling, Traffic World (Logistics), and so on.
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Be professional.
Best of luck.
Have fun!