Inventive Thinking (CCT 612) Thurs. 4-6:30 PM
Nina Greenwald (ngreenwald@comcast.net)
office hours: by appointment

Mark Twain once said, **"Accident is the name of the greatest of all inventors".** Prepare now to take advantage of the next accident in your inventing career!

What's in store!.... Every day, millions of folks get flashes of inspiration. Some of these inspirations relate to the solution of a pressing problem or how to accomplish a task easier, more quickly or less expensively. Doubtless, you've had such flashes from time to time, yet despite these moments have not pursued your ideas. Here's your chance! This experiential course, which might also be entitled "inventor's workshop", is for wannabe inventors in ***any*** domain! It unfolds in stages and emphasizes creative fulfillment through:

- understanding the process of invention
- practicing the kinds of thinking that lead to invention
- learning about the invention process from inventors and other specialists (e.g.,marketing and patent specialists)
- making site visits to inventive companies, organizations
- inventing and developing a product and/or service
- exploring the feasibility of patenting and marketing an idea
- and many other experiences not possible to predict at this time!

To fuel your inventive thinking jets...

- DeMatteis Bob. From Patent to Profit: Secrets and Strategies for the Successful Inventor (optional: on loan from Nina)
- Job, Donald J. The Inventor's Guide
- selected readings on invention
- materials for inventive messing around
- visits from inventors, mentors, marketing and patent specialists
- attending a meeting of the New England Inventor's Association

"immersions"…

- readings on invention
- timely article swaps
- two-part inventor's log

1) contains ideas; sketches; thinking process reflections; discoveries, etc. (submitted mid and end of semester)
2) brief paper: "On becoming an inventor" (highlights, reflections: your growth and development as an inventor; included with second journal submission)

- E-Team product and/or service development (from concept to

prototype to written plan for assessment by WISC: may be optional)

the plan: (which could get re-invented along the way!)

Orientation (Weeks 1-2: Jan. 29- Feb. 5)

The Who, Why, and What of Inventing

Think: We're inventing all the time!

What is an "invention"?Who is an inventor? (myths and realities); Why do people invent? (what motivates inventors?)
How does one become an inventor? (how people create)

- creativity and invention
- reasons people invent
- we *all* invent!
- attributes of inventors
- there's an invention(s) on this page!
- learning from those who made it: favorite inventors
- kinds/categories of inventions
- two-part inventor's log

through familiar surrounds with new eyes

Pad and pencil in hand, take a walk through familiar surrounds. Certain places in your home, your neighborhood, workplace, shopping centers, parking lots, where ever!... Take a good look around, observing things, thinking about what could be changed, modified or improved to solve a problem, annoyance, make something easier, more managable, useful, etc.
Trying on the inventor's mind (thinking like an inventor!)

Think: there oughta be a better way!…

dispositions for invention: playfulness, fooling around, boundary breaking, humor, vision, confidence!

- find a "why": think about real-life problems that could be solved by a device of some kind (bug listing; problem finding; asking questions; questioning assumptions)

- find a what: what device that might solve this problem?

- find a how: how might this device might work?
(SCAMPER; attribute listing; part-changing; forced pairing; analogies/metaphors; six hats thinking; visualizing/imaging)

- elasticize your thinking! (improving products of living things: "bloody" matters!)

- think like Rube Goldberg: a crazy machine with at least 5 parts to do a simple thing (e.g., crack an egg; shampoo your hair; put the cat out; get in bed)

- keep a log! (the inventor's nerve center!)

Preparation (weeks 3-6: Feb. 12- Mar.4)

Think: To get the biggest rewards you often have to risk the most!

- compare what exists to the ideal; develop a vision of what could be rather than what is; change your perspective when looking at a problem, elasticize your thinking
- understand stages in the invention process
- learn from successful inventors
- gear up to recognize what ought to be!…target possible problems (common object critical review; bug listing; worst ways to do something and how to fix it)
- meet your mentor!

- Feb. 13: mentor meetings
- Feb. 20: inventor guest panel (talk with some dedicated inventors!)
- Feb. 27: guest, Phil Weilerstein, Director, NCIIA: forming E Teams (goals, objectives, roles, process); Josh Greenwald, Entreclub winner, UMass five college consortium
- Mar.? (to be determined) guest, Joseph Abboud, world famous men's clothing designer/entrepreneur (and UMB/COM graduate!)

Illumination/Perspiration (weeks 7-13: Mar.11- Apr. 22)

(Spring Break: March 16-24)

Think: Look for problems and frustrations. There lie your opportunities!

on your way!.. E Team immersion with mentors

- problem identification: target what needs to be changed, modified, improved
- apply CPS and other generative thinking models (TRIZ) to the inventive thinking process
- design /build a model or prototype

- test, evaluate, re-work your prototype
- prepare of your product/service proposal for WISC (Wisconsin Innovation Service Center for a new product assessment)
- attend NEIA meeting (Mon., Mar.11?)

Patenting / "Protecting"/ Marketing
(weeks 14-15: Apr. 29-May 6)

Think: An ounce of prevention is worth a pound of cure!

- What's important to know? Role play to learn the nuts and bolts of patenting, protecting your rights, marketing and manufacturing
- Practicing your invention presentation; presenting to guest manufacturing and marketing experts!
- Looking back: a retrospective look at your becoming an inventor!

Readings: (additional materials to be provided)

DeMatteis, Bob. **from Patent to Profi**t; secrets and strategies for the successful inventor, Avery Publications, 1999.

Job, Donald D. **The Inventor's Guide**, Haley Public, Lexington, MA. 1987.

Feb. 5
DeMatteis (Ch. 1: All About Inventing)
Job (Ch. 1: The Who, Why, What of inventing)
Article: "Thinking Like An Inventor" (from **Mind Matters**)
Article: Sternberg, "The Nature of Creativity"

Feb. 12 (intial meeting with mentors)
DeMatteis (Ch. 4: Inventing and Problem Solving)
Job (Ch. 2: Learning From Those Who Made It)
Article: Andrews ("History of Women Inventors")
Article: Salisbury ("The Heart of Microsurgery")

Feb. 19 (guest panel of inventors)
DeMatteis (Ch. 2: Your Invention Strategy)
Job (Ch. 3: The Invention Process)
Article swap

Feb. 26 (guest: Phil Weilerstein, Executive Director, NCIIA)
DeMatteis (Ch. 3: Developing Your Invention)
Job (Ch. 4, 5: Inventing for Your Own Use; Inventing on the Job)

Mar. 4 mentors and teams

Mar. 11-25 mentors and teams
Job (Ch. 13, 7, 8: Producing Your Product; Assessing Market Worth; Assessing Financial Worth)
Article: "But Will It Fly?"

Mar. 18 SPRING BREAK

Apr. 1
Job (Ch. 9: Protecting Your Invention)
Article swap

Apr. 8
Job (Ch.10, 11: To License or Build a Business? Inventing to License)
DeMatteis (Chapters 14, 15: Licensing)

Apr. 15- Apr. 29
Job (Ch.14: Packaging and Presenting Your Product)
Dematteis (Ch. 5, 6, 7, 8: Patenting; Ch. 9, 10, 11, 12: Marketing)

May 6
E-Team presentations (with guest inventor audience)