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Biomedical Thrillers: Fiction based in fact, or just fiction?

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Biomedical Thrillers: Fiction based in fact, or just fiction?

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What is a Biomedical Thriller?

- According to the Merriam-Webster Dictionary:
 - Biomedical = of, relating to, or involving biological, medical, and physical science
 - Thriller= one that thrills; *especially* : a work of fiction or drama designed to hold the interest by the use of a high degree of intrigue, adventure, or suspense

Why do people like to read them?

- fun and engaging; makes science very “cool”
- seem like they could be true, so they are scary
- can make us more aware of biomedical issues and concerns
- help us address potentially difficult ethical issues in an entertaining manner
- provide us with something interesting and fun to think and talk about

Who writes them?

- Virtually anyone could write one, but the ones presented here were well researched, based in scholarship
- Written by medical doctors (M.D.s), researchers, professors, biologists (Ph.D.s) nurses, medical ethicists, and lawyers

MICHAEL PALMER

OFFICIAL WEBSITE



MICHAEL CRICHTON

THE OFFICIAL SITE



Don Donaldson (Ph.D.)



Kathy Reichs (Ph.D.)



Jennifer Rohn (Ph.D.)



Gil Snider (M.D.)

ROBIN COOK



Joshua Spanogle (M.D.)



William Cutrer (M.D.)



Sandra Glahn (Th.M)



F. Paul Wilson (M.D.)

What is the main “formula” storyline?

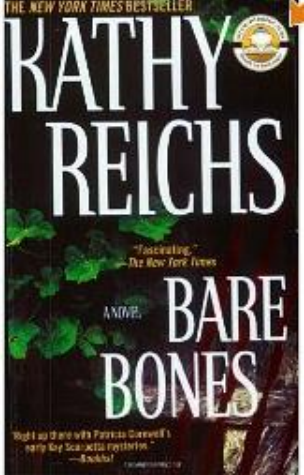
- A young, idealistic person (protagonist) is trying to “make it” in science and/or medicine
- The protagonist discovers something is not right in the world of science or medicine
- In the process of trying to right the wrong, the protagonist discovers that his/her superior is involved in nefarious activities
- Protagonist tries to solve the problem and save the day without getting killed or having their career destroyed, and while often addressing ethical dilemmas.

What types of biological issues do biomedical thrillers often address?

1. Whose bones are those really? (Kathy Reichs, *Bare Bones*)
2. Shortage of human organs for transplant and What could be done with patient blood/tissue samples? (Michael Palmer, *The Fifth Vial*)
3. Poisoning of patients by healthcare workers and impact of law suits/medical malpractice on doctors (Robin Cook, *Harmful Intent*)
4. nanotechnology as a human predator (*Prey*)
5. Harvesting of human gametes without consent (Martha Ogburn, *Progeny*)
6. Longevity vs. cancer therapy genes; multiple uses of a technology (Sal DeStefano, *The Methuselah Gene*)
7. Industrial toxicology (Michael Palmer, *Critical Judgment*)
8. Pharmaceutical and holistic medicine fraud (Michael Palmer, *Natural Causes*)

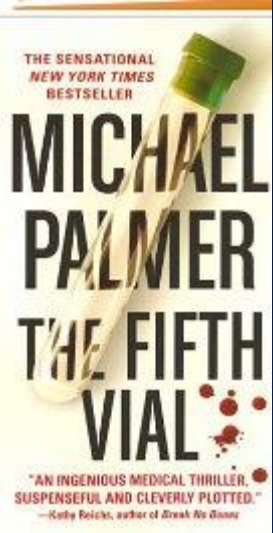
Biomedical Thrillers – Issues (cont.)

9. Use of pig organs to replace liver in an alcoholic patient, problem of virus introduction (Don Donaldson (David Best), *The Judas Virus*)
10. Bioethical dilemmas, HIV antibodies, organ transplantation (Sandra Glahn, *Informed Consent*)
11. Crimes against physicians, Asperger's Syndrome, faking of patient conditions to secure insurance payments (Michael Palmer, *The Second Opinion*)
12. Pharmaceutical industry, vaccine development, cancer and cell biology research (Jennifer Rohn, *Experimental Heart*)
13. Aortic device failure and stem cell therapy, hospital corruption (A. Scott Pearson, *Rupture*)
14. Deliberate poisoning of world leaders by physicians (Gil Snider, *Brain Warp*)
15. Spread of viral epidemics and issues of the homeless and mentally disabled (Joshua Spanogle, *Isolation Ward*)
16. Mind control, medical education and pharmaceutical interests (F. Paul Wilson, *The Select*)



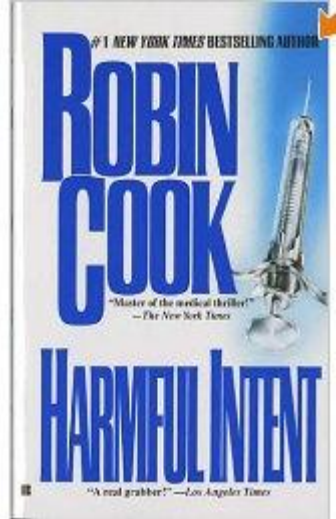
Bare Bones

- Main character, Temperance Brennan (forensic pathologist)
- While investigating a found bone burial site, it is discovered that there may be some illegal trade in exotic species going on.
- [Kathy Reichs-interview-Bare Bones](#)



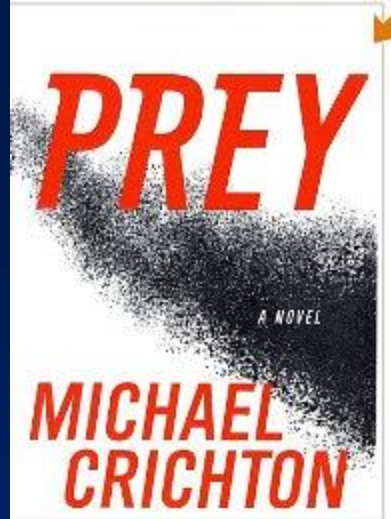
The Fifth Vial

- While at a medical conference in Brazil, Harvard medical school student Natalie Reyes is attacked
- She loses a lung – it is stolen, She does not die.
- This story involves the possibility of secret societies, criminal use of blood samples and the illegal organ transplant trade
- [Interview with Michael Palmer-Fifth Vial](#)



Harmful Intent

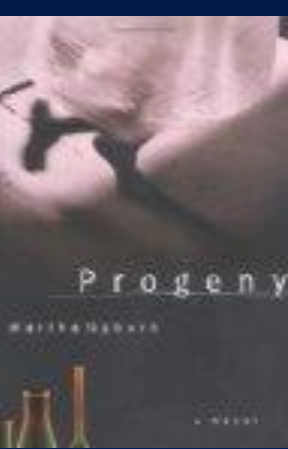
- Dr. Rhodes, an anesthesiologist at Boston Memorial Hospital is giving routine anesthesia for a C-Section, when the patient has a grand mal seizure and dies
- Dr. Rhodes loses the resulting malpractice suit for \$11 million and is convicted of first degree murder, due to his apparent negligence.
- He does not know why the patient died, so he sets off to find out! – made into a CBS-TV movie (1993)
- [Interview with Robin Cook-General](#)



Prey

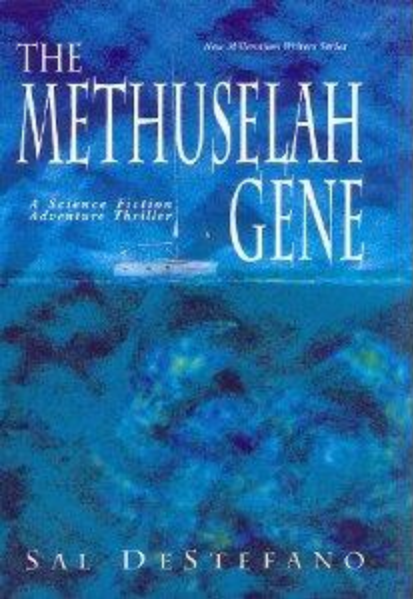
- Jack Forman (scientist) got fired for being a whistle blower at work where he was involved in programming computers to mimic swarming behavior (now stay at home Dad)
- His wife, a scientist for Xymos company, who Jack discovers, once called in as a consultant, has created a top secret self-replicating form of nanotechnology that swarms and has human prey.

[Prey-interview](#) (excerpt 4:30-5:40)



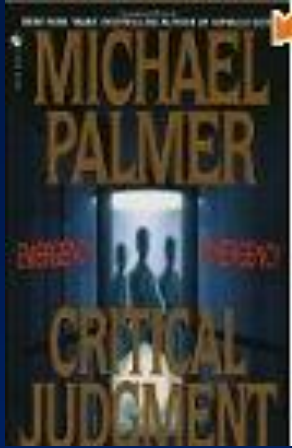
Progeny

- Dr. Matthew Hamilton cuts a deal with his superior, Dr. Robert Chan during medical school
- Matthew orchestrates a miscarriage in his wife Rachel. 15 years later Rachel runs into a girl that looks like she could be her daughter.
- Rachel investigates – Dr. Chan is pushing the boundaries of fetal and genetic research.



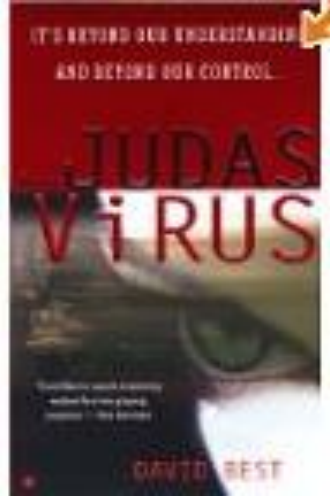
The Methuselah Gene

- Dr. Allan Johnson is a plant geneticist working for the biotech company, Omnigen. His son is sick with an incurable brain cancer.
- Meanwhile a 20 foot crab is discovered in Barnegat Bay, NJ with a longevity gene which is also potentially a cancer curing gene.
- Next a fight ensues over who gets access to that mutation (Federal government, Omnigen, or concerned father to treat his son)
- [Sal DeStefano Interview](#)



Critical Judgment

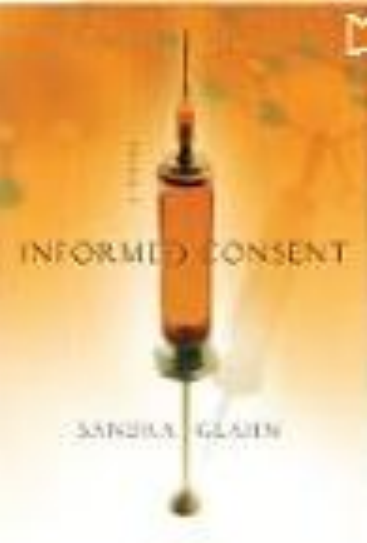
- Emergency room doctor, Abby Dolan has followed her fiancée to the town of Patience, CA.
- She is beginning to see several cases that appear to be a sign that the townspeople are being poisoned.
- When these townspeople, including her fiancée begin acting violent, Abby starts to investigate.
- [Interview with Michael Palmer-Critical Judgment](#)



The Judas Virus

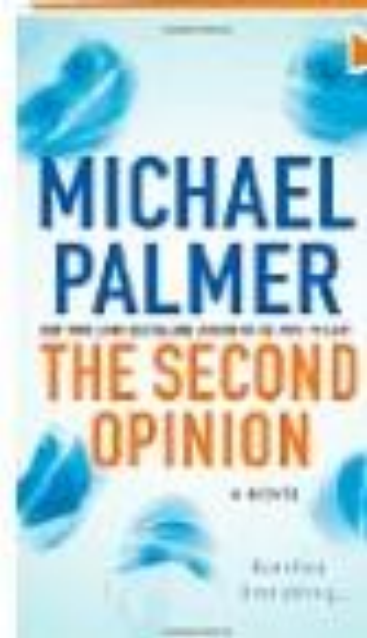
- Dr. Chris Collins, medical director of infection control for Good Samaritan Hospital
- Her estranged, alcoholic father (Wayne) asks her to donate a piece of her liver to him to save his life.
- She refuses, but obtains a pig liver
- The operation is very successful, Wayne's recover is remarkable but then two of the transplant team's nurses die screaming in pain (was there a complicating virus?).
- Chris sets out to investigate
- [Don Donaldson \(David Best\) website](#)

Informed Consent



- Dr. Jeremy Cramer is a young doctor on the verge of a break-through medical discovery, when he is involved in an accident involving the fatal infection of a nurse with HIV and the infection of his son with a life threatening disease
- Suddenly Jeremy is facing personal dilemmas involving informed consent as his son is in desperate need of a heart transplant.
- [Website highlighting Sandra Glahn and her co-author Dr. William Cutrer](#)

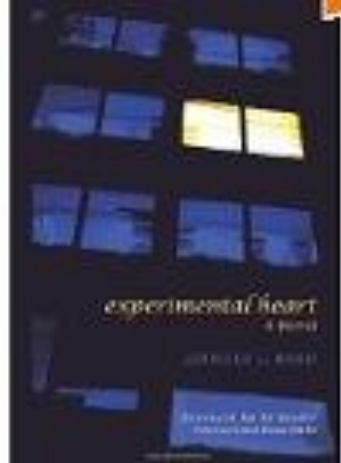
The Second Opinion

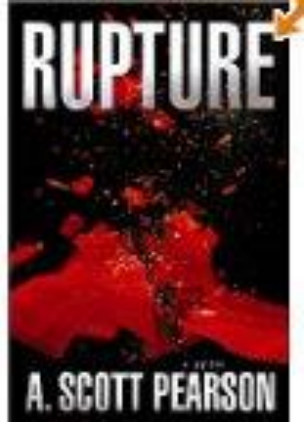


- Dr. Thea Sperelakis (who also has Asperger's Syndrome) returns from the Congo working for Doctors without Borders to care for her injured father, an accomplished surgeon, who is in a coma following an accident
- She is able to communicate via a secret combination of finger taps with her father who thinks he has tumbled upon some medical fraud
- Thea discovers that her father's accident was probably not one, and she begins to investigate the situation
- [Interview with Michael Palmer-The Second Opinion](#)

Experimental Heart

- Andy O'Hara, a post-doctoral researcher at a London cancer research institute agrees to help an attractive colleague, Gina who is collaborating with a pharmaceutical company.
- Gina is working on a virus-based vaccine but has discovered the company is planning a clinical trial of the vaccine in Africa without preliminary animal tests
- But they discover a reason why the vaccine may be doomed for failure
- [Dr. Jennifer Rohn talks about cell shape research](#)





Rupture

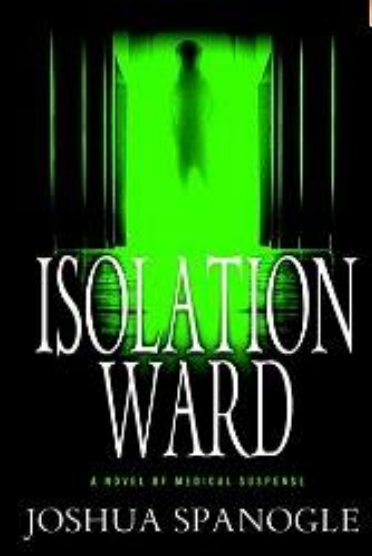
- Dr. Eli Branch, a young surgeon at Gates Memorial Hospital in Memphis gets blamed for a botched procedure headed by the chief of vascular surgery
- While investigating the suspicious death of one of his patients, Eli uncovers an elaborate web of lies spun by his late father, a long time professor of anatomy at Mid-South Medical College in Memphis.
- Instead of finding answers, Eli finds more questions and more victims, each meeting a sudden, violent end.
- Eli joins forensic pathologist, Meg Daily to find a common thread among the victims and try to solve the puzzle.
- [A. Scott Pearson talks about publication](#)



Brain Warp

- Dr. Peter Branstead's neurology dept. at St. Mark's Hospital (NY) has several cases of critically ill patients (vagrants) admitted in a confused state progressing to convulsions, cardiac arrest and death.
- These deaths are methodical with a pattern, not coincidence
- Peter uncovers a plot to destroy the President of the Ukraine; the NY vagrants had been given a drug being tested as an assassination weapon.
- [Gil Snider talks about Brain Warp](#)

Isolation Ward



- Dr. Nathaniel McCormick, and officer in the CDC's Epidemic Intelligence Service is called to St. Raphael's Hospital in Baltimore, where three young women are admitted complaining of flu-like symptoms, with rapid deterioration.
- Nate begins to fear the worst that a virus has been unleashed as a terrorist attack.
- Finds some shady practices going on in group homes for the mentally disabled
- He learns that a drug company has been experimenting with a very particular means for treating diseased organs.
- [Joshua Spanogle website.](#)



The Select

- Quinn Cleary can only afford to go to medical school if she is accepted by The Ingraham, a very exclusive program with all medical school expenses paid by a large pharmaceutical company.
- She is rejected but gets enrolled due to some quick and dubious action on the part of her friends.
- Quinn begins to notice subtle changes in her classmates, a common line of opinion and a mysterious Ward C
- Could the school's administration be frustrated with tedious and lengthy FDA regulations and be experimenting on humans?
- As Quinn tackles the mystery she put her life in danger as her discoveries threaten to topple a pharmaceutical empire.

Gattaca

- In the not-too-distant future, a less-than-perfect man wants to travel to the stars. Society has categorized Vincent Freeman as less than suitable given his genetic make-up and he has become one of the underclass of humans that are only useful for menial jobs.
- To move ahead, he assumes the identity of Jerome Morrow, a perfect genetic specimen who is a paraplegic as a result of a car accident. With professional advice, Vincent learns to deceive DNA and urine sample testing. Just when he is finally scheduled for a space mission, his program director is killed and the police begin an investigation, jeopardizing his secret.

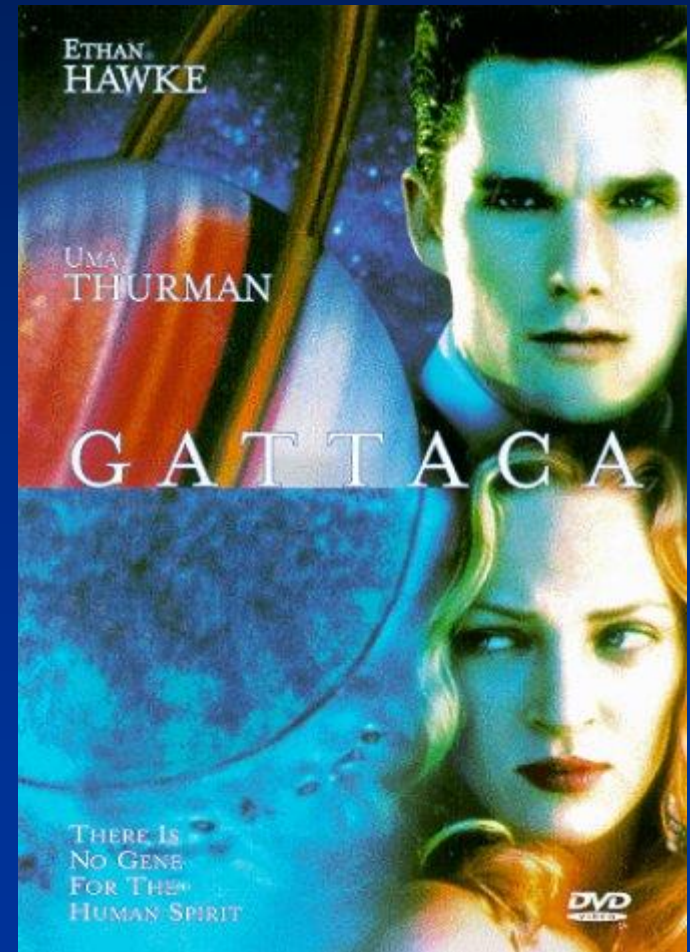
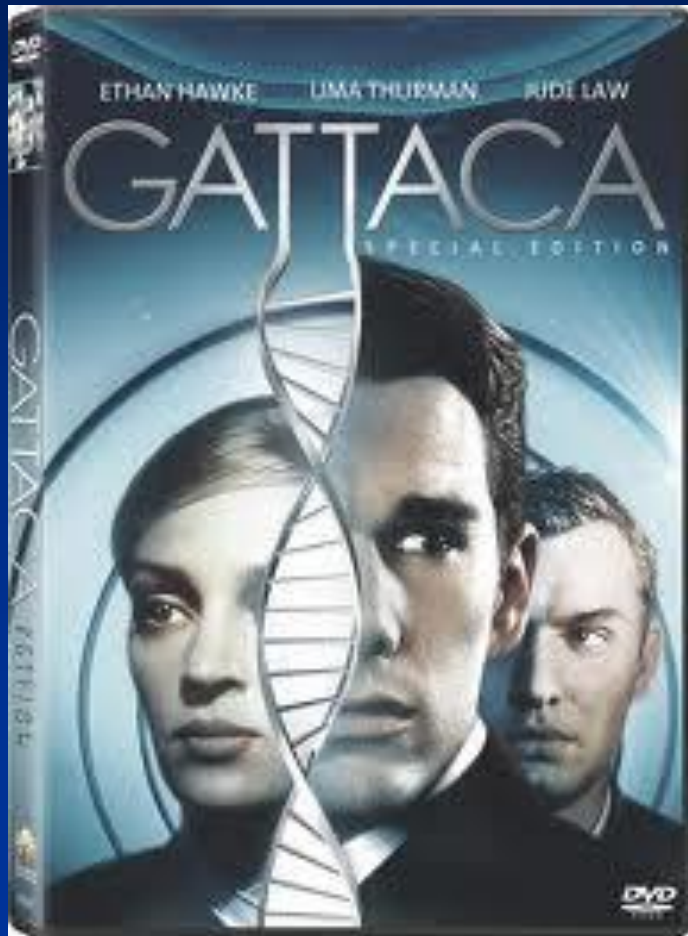
Written by [garykmc](http://www.imdb.com/title/tt0119177/plotsummary) from

<http://www.imdb.com/title/tt0119177/plotsummary>



Gattaca

- [Link to Gattaca - Movie Trailer](#)



Are these stories really possible?

- Consider the story of Henrietta Lacks:
 - In 1951 she went to Johns Hopkins Hospital and was diagnosed with an aggressive form of cervical cancer.
 - Without her knowledge, University researchers were able to keep her cells alive in a petri dish
 - She could not afford medical insurance and to this day her descendants do not have medical insurance.
 - Yet, her cells are in virtually every laboratory freezer in the world and have made countless medical treatments (particularly for cancer) possible
 - Many people are alive today because of her cells

*The Immortal Life of Henrietta
Lacks*

By: Rebecca Skloot

- [Video of Rebecca Skloot talking about this book-](#)
Short overview

- Consider these recent news headlines (summer 2011):
 - Record drug shortages strain hospitals' ability to cope
 - Super-resistant gonorrhea strain found in Japan
 - Truck crash releases 14 million angry bees and honey on highway
 - Reports: CIA tried to confirm Bin Laden DNA using fake vaccination drive
 - Researchers reprogram brain cells to become heart cells
 - Concerns about quality of care at critical access hospitals
 - Nurse commits suicide after medical mistake kills a baby
 - Camels may offer nano-based cancer gene therapy

Perhaps it is time to read a new Biomedical Thriller?



That's what I will be doing whenever I can steal a
bit of time.