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University of Houston
Oral History of Houston Project
Houston History Class

Interviewee:	Dr. Joe Pratt
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Interviewer:	Bruce Causey
Transcriber:	Michelle Kokes
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Abstract:

Joe Pratt is the coordinator of the Energy Management and Policy Group and teaches courses in international business and energy history and regulation. He became interested in oil through his family's connection to the industry and his upbringing in Port Neches. His father worked in a refinery in the early days of the wildcatters and Pratt also worked at the refinery during his school breaks. This interview centers on the oil refining industry of Houston beginning with the discovery of Spindletop, how it helped introduce Houston as the oil capital of the world and attracted a flow of industrial workers. Dr. Pratt visits modern day refineries and compared them to the plants of the past by discussing the technological advances and the increasing amount of usable product per barrel of oil. There is an emphasis on sustainability and the future of oil refining in Houston and how it may affect the economy and climate. Dr. Pratt highlights the mutually beneficial relationship between the Houston Ship Channel and Houston's oil industry.

UNIVERSITY OF HOUSTON
ORAL HISTORY OF HOUSTON PROJECT

Joe Pratt

Interviewed by: **Bruce Causey**
Date: **March 18, 2014**
Transcribed by: **Michelle Kokes**
Location: **University of Houston, Houston, Texas**

BC: My name is Bruce Causey. I'm here to interview Professor Pratt on oil refining. The time is about 3:00 in his office 302K in the classroom in the business building. Mr. Pratt if you mind stating your name and the position?

JP: I'm Joe Pratt, I'm the Cullen Professor of History and Business at U of H where I've taught since 1986.

BC: If you wouldn't mind explaining how you became interested in oil?

JP: I grew up in a refinery-working family by Port Neches, Texas. My whole family my brothers, my uncles, my wife's family all worked in one capacity or another in a refinery in a petrochemical plant. I grew up around them so I grew up smelling them, I grew up eating because of them, and I grew up in a house paid for by them, all kinds of things. The good news for me was when it got time to where I was 18, I could always get jobs in the plants because one of my uncles or my dad could always get me on in the summers which were these great summer jobs and for shut downs that they don't have anymore. I could get enough money working regular shifts and over time to pay my way to college just about. When I started going away to school, I went to Rice and I had a senior thesis and everything from that point forward where I had a choice to write I'd write about the oil industry. That's really how I got into the world I am in now and what I teach now and what I read and write about.

BC: In your opinion what has allowed Houston to thrive so well in the oil industry?

JP: I've actually been lecturing about this. We have a book coming out called *Energy Capitals* I might have sent you a chapter. I will if you remind you to. it should be out within a week. It's an anthology of essays and the essay that I co-authored with a colleague Martin Melosi in the History department here. The title is "Houston: Energy Capital of the World?" We are trying to explain how this really thick, big cluster of industry grew around oil in Houston. It has been clear to me since I first started working on this that the heart of the matter was not just discovering oil around Houston, which was Spindletop in 1901 and Beaumont then oil moved in this direction; but the fact that a lot of the big refineries that grew out of those oil fields were built first in Port Arthur, in Beaumont and in the 1920s forwarding Houston and refining is in my opinion is the central reason why Houston became this big conglomeration of energy related functions. It's the one that was the first giant part of the industry that was permanent and where you invest the money to stay that had a whole lot of jobs that drew poor people like my dad and his family, my mom and her family from the interior of Texas and also from Louisiana to come here to work. I think refining plays a central role in establishing Houston as a center of her growth in oil related enterprises, oil and gas. It kind of declines an impact once the refineries start to replace people with computers. There's a lot fewer workers in the big refineries now but for 70 years it was the driver of growth from Beaumont to the ship channel.

BC: Besides from obviously, jobs and businesses coming to the city provide money, what has oil refining done for the city of Houston?

JP: I think the big thing in my mind is one of the things we have lost in modern America are those really good industrial jobs. People like my dad could get a job without a 7th grade education. He was really good with his hands, he was a serious human who took work responsibility seriously. Those jobs are worth their weight in gold when you are industrializing,

where big numbers of people can come and really get started in upward mobility for their families. A lot of the farmers who were probably the central employment in Texas before the discovery of oil would have been small farmers and share croppers. A lot of those people were really looking for a way to get broader horizons in life and the plants gave them that. They could come here, usually it was a relative, a brother or an uncle would say, "I can get you on," because they hired good workers there. They hired families as a lot of companies did then because they had gone with one guy and the families kind of worked hard maybe the brothers would. You could come here and have a job almost instantly in the plants and then for the first time in the life of many of the people in my family, you actually got a paid vacation. Farmers don't get paid vacations. You had some availability of healthcare in the plants and some health insurance, you had a union. If you were making a lower middle class wage by the mid-50s it was really a bigger bargain than people in a situation my dad found himself in when he got back from World War II than people could find. He took the opportunity to come here and I think it helped define Houston as a working class city. I call Houston as the city of opportunity partly because it was so clearly the case in my case and I think 27 years in, teaching at U of H I see our university a university of opportunity where people come to make choices for themselves in life. I think the refineries were a very big part of getting that tradition started, those jobs were permanent when they came. A lot of them came back from World War II and worked until they died or until they retired. A lot of loyalty to the companies, a lot of loyalty to the unions. It shaped the whole, 1945… probably 1920s until the 1970s, the culture of a lot of our region of the attitude toward hard work and getting our reward through generations as opposed to tomorrow. Getting your kids in college was a big fantasy but it worked for a lot of people. I'm sorry I can't talk very clearly. I'm tired, I guess.

BC: Its fine, sir.

JP: As long as you can hear it when you play it back. I'll try to clear my voice.

BC: From the history of Houston oil refining to today, the quantities of crude coming in and refined oil and gasoline going out have changed but has the percentages changed of what Houston has been able to refine compared to the quantity?

JP: I don't have the numbers but I know the answer is yes. I stress this, I teach energy and sustainability courses now more than history. I stress this every time I end up talking about oil and comparing it to coal. There is nothing in the other sectors of the energy of the fossil fuel industry certainly, that is the equivalent of the oil refinery. Those refineries now, I've passed some of them from the time I was born until… I'm 65 they don't look very different from 1948 or say from 1955 when I was old enough to see where my dad worked. They don't look very different and one reason is they almost never move historically, because after the 1970s every refinery's traditional site is by definition a toxic waste site. Layer after layer of oil and chemicals. They don't even try to build new ones they just build new ones in place. They put in new units and one of the… since the 1920s when automobiles became the big new market for refined product as opposed kerosene for lighting or fuel oil, those refineries have been real miracle markers in terms of taking crude oil of increasingly bad… not light and not sweet, so not light is not heavy oil and sweet is not sulfur. Historically you took that oil and you made your good products. Those refineries have learned over 70 years to make more product per barrel of oil, to make better product out of bottom grades of crude that have a lot of sulfur and are very heavy. There have just been amazingly technological advances and nobody knows it when we look at the offshore drilling rigs and things. There has been this equipment revolution in refining, some of it comes from automation. Computers are better than people at running heat intensive

and catalytic intensive processes. They are just better at measuring systematic measurements. But a lot of it has been in chemical, chemical engineering, the chemistry of molecules. They just keep, for a long time it was to make more money, to have more flexibility so when the price of heavy crude got a whole lot lower than the prices of better grade crude, you could shift to it and make more money because it was so much cheaper to buy. A lot of it also and the recent, in the 70s as far as regulation, we've asked the refineries to do pretty amazing things and to pay for it themselves. That is how our regulatory system works. They have almost always done it and they have passed the cost on to us but the cost isn't nearly as high as the improvement in quality. Yes a whole lot, the two figures that would stand out if you did first refinery, say Gulf 1902 Port Arthur to the big refineries in Port Arthur to the Ship Channel in Baytown would be a lot more product per person hour per person hired and a lot more product per barrel of oil. More of what comes in get sold now and it just doesn't seem to end if you drive on the ship channel bridge on Beltway 8 to the east of the city toward the Beaumont side, you start to see over the last year these big old stacks of black coal looking stuff. It's called petcoke and it's these heavier crudes and when they get refined they leave a lot of residue. They have even learned how to market it as a kind of low grade coal that Chinese and others will burn, it's just selling the whole barrel. The value added in refineries just keeps going up and here's the cost of the oil, here's what they can get out of it and they do that by the miracles of modern chemistry. That's one reason all the big chemical plants are paired with big companies, with the big refineries, because they are doing the same thing. They are taking natural gas or processed crude and trying to find the highest value they can sell it for from petrochemical products down to gasoline or up to gasoline. I don't enough about, I don't know as much about refining as I know about other parts about of the oil industry but I know enough to be really impressed about what they have done. Started with

gasoline, we thought we had a shortage of oil in the 1920s and the response was new ways to refine they call it cranking oil so you got more gasoline per barrel of oil they could sell and it just goes from there, catalytic crackers. All kind of good things.

BC: With somebody, with what you were saying with people speaking about clean, renewable energy. Do you believe that oil has a timeline for when it is just going to be cut off or do you think it is going to have a pretty long future?

JP: I don't see a timeline and I do see a long future. We are not running out of oil like we thought we were because we are making liquate and gaseous fuel out of all kind of inferior hydrocarbons, oil sands, oil shell. We've unlocked shell gas and oil which I never thought would happen in terms of learning how to frack the rock so that it's… one thing you have to realize about the shell revolution is that it's really high quality oil and gas in that shell. We've never been able to get it out and now we can get it out. It's not like oil sands where we have this gook that you had to somehow you have to refine essentially twice. You had to refine to make it a liquid and then you had to refine it to make it a better product. The shell oil and gas is a high quality to start with, it's pretty amazing. I don't think… I think what we are going to see is greener oil. Some of that, every day almost, the EPA decrees is going to be greener and the companies don't have a choice but to make it which is good for us if they do. We pay a little more but we don't notice because the rise of gas is so high, a lot of that is going to the producing government. So yeah, greener and I think I just lectured about this today the future of fossil fuel is that I think the key questions right now are when does the environmental cost get too high to bear? When do people and however you elect governments around the world, decide that? If or when? I think in the U.S. the strong regulation won't come until people get really afraid of what's happening to the world. We aren't afraid yet, we don't see the water rising in our houses.

I don't think many of us really think the hurricanes are more severe and you can't prove that because climate change and on and on. We are racing environmental issues to see how, to see if we can cut carbon from hydrocarbons. We are also racing the supply of liquid fuel of oil by seeing how much money and how much technology it is going to take to make things that weren't usable in the past into usable liquid. They call them sin crude but its oil-like fuel. It's made from thinks like oil sand. It's a tricky one when we debate it. We've had these debates at U of H Energy, there are four debates this year. It tends to fall into really extreme, "Well yes! Well no!" They yell at each other when it's really a much more subtle question. A lot of it has to do with the instructions given to the research establishment and universities and the oil and gas companies by government regulation. How serious it the problem and can we deal with it and still have oil and gas? I think the answer is yes, it's going to be more expensive oil and gas. Somewhere down the line comes the environmental, reaching within the environment to protect environmental quality in a world that uses a lot of hydrocarbons and coal. Sooner or later those regulations push the price up and sooner or later subsidies for renewable energies pushes that price down. 30 to 40 years from now we start to see a new mix emerge maybe or there is a shell oil and gas revolution and we just forget about all of it and we just go this way and climate change bites us on the behind and we just worry about it then. Shell gas is an incredibly interesting fuel and there's shell all over the world if people just want to develop it. If societies decide it's worth the economic positive to, we can management the environment well enough where that trade-off is good. It's a tricky thing to decide with the political system. We've deiced in the U.S. right now by default we just said, "Until they stop us we are going in that direction." But the refineries will play a big role in that. Greener gasoline is not a fantasy, you can see it in my lifetime. It gets less sulfur, less greenhouse gasses. A lot of the big chains after the 1970

clean air act. It's happening for the last 40 or 50 years and the refineries have paid a really high price but they just cash it back to us. It's an indirect taxing almost. I'm fine with that. We need fuel. I do go on, I like this stuff.

BC: It is very interesting.

JP: I just talked about it for an hour.

BC: After the incident at Texas City, the refinery explosion, was there a knee jerk reaction of new safety procedures and equipment? Or did they just double down on what was already there?

JP: I'm not an expert on this, you might want to look at that James Baker report. Texas City is a great way to look at this. We don't have great statistics historically about refining accidents and things that get good by standing of OSHA. I was interviewed about BP for an American Experience episode on PBS and they didn't use my interview because there was an investigative reporter that I had seen on TV all my life and he really pushed me to say what he wanted and what he wanted me to say was somebody to criticize BP. I had gone into the interview thinking, "I don't need to do that." But the more I thought about it my true feeling about it was we didn't have to double down on the safety so much as we had to find the outlier of BP, they were just a bad company. I had a good friend who ran the Amoco's Texas City Chemical Plant. I knew him and I wrote a history of Amoco and that facility was theirs historically, BP bought it when they bought Amoco in 1999, when they absorbed it. BP just talked about what they were doing a lot more than they did it. That accident when you looked at the Macondo oil spill and the Texas City, the interview for American Experience was supposed to be about the Macondo was just pushing and I finally said, "I'm a refinery worker's son, grew up everybody I knew worked in the refinery of the petrochemical plant. From what I read about and talked to other people about the Texas City explosion, it was a 1920s explosion just incompetent. They put contractor's way

too close to where the dangers were. They did everything that they wouldn't have done with me as a summer shut down worker in the 1960s and when you read the Macondo reports, the same general response to BP. If that's the best they can do whey let the back in the Gulf of Mexico? Punish them. Make them pay. It… So we do double down and we look at how do we improve at the margins that reduce the chance that these things will happen again? The main thing we do is pass good regulations. It makes sense like, where the contractors can be when you shut down the procedures and most companies have those already. Then you have to be sure they do it instead of say they are going to do it. It's too late when people are dead. Then you say, "Okay let's make sure that doesn't happen again for 10 years." It has to be… same with the oil spill. It has to be a commitment by government and by the companies themselves to say, "The only way we get out from under this cloud is not to have these major accidents so often and we have to manage better." They can do it, it's not even a matter of money. They can do it. It's a matter of corporate culture and things. BP was just on the far end of the big companies in how they managed and from everything I could tell. I'm kind of bias because I was in Amoco and I was I was writing the history of Amoco when they got bought by BP and I watched what BP did to Amoco because they paid a lot of money for the company and then ripped it up and kind of threw it away, which is kind of stupid when you pay a lot of money for something. But the Texas City refinery was really a throwback to the old, old days when there really weren't many rules in terms of what happened. It's been very gradual. [Phone rings and interrupts] Where we were we? Safety. One of the things we find in environment and safety is that there is a long period where the companies have control of the process and don't do a particularly good job that there's not much environmental regulation. I've written about this in detail about regional oil companies. They don't have to, nobody's making them. They say, "This is as well as this can be done and not hurt

us economically." And the unions which my dad was in the OCAW which was the Oil Chemical and Atomic Workers, was a big union for a long time they died in the last 20 years. They may as well not exist in a lot of issues. The unions didn't tend to fight those issues either. They said we need longer vacations, higher pay but not greater safety. My dad was in plant safety all his life and the people in plant safety had to go to regular company-run seminars about what to do in emergencies. The people in plant safety, when the whistle blew that something bad was happening somewhere all the plant safety from all the different companies in all the whole county would go there and you sat there the rest of the day worrying about your dad or I did. So that's the way they addressed it. Finally it just got unacceptable to a lot of people who cared about the people in the refineries and cared about workers in general and in the 70s when we created OSHA, the Oil Safety and Health Administration and the EPA the same year, 1970, we really did start to say in a governmental way, "This is a more important issue and we are going to make it a more important issue, we're going to make more rules." And they overreacted in the view of business people but my point of view at the time, I was working in the plants was, the kinds of stuff I'm being asked to do there was ridiculous. I need money but they put us in places they shouldn't put humans without real safety equipment or anything and I didn't really understand until one summer I worked an August of overtimes. This thing called a carbon black unit in a rubber plant I was working in Goodrich Gulf and Rubber. They had a fire and they put it out with water. The rubber had gotten hard as a rock almost and only the summer guys would go in and work that hard, it was ridiculous. You were laying about this much, trying to knock this burned rubber, this big old solid rock of rubber off over 16 hours a day for three or four weeks and we didn't have respirators. We had these plastic shields and we were gagging on it. The carbon black unit where that was, they gave you 15 minutes before you got off to go in and

shower and rub down with Vaseline and try to get the garbage off of you. I had an apartment my third year at Rice and woke up one morning in November having not worked in that unit since August, late August and had carbon black on my sheets that had come out of my skin somehow. I'm thinking, "This is not good!" I've always wondered how much of my life they have taken. People like my dad worked in a Butadiene plant where they made rubber and we now know it was the most one of the most cacogenic substances that petrochemical plants used to make product. There was no, there was nothing. You would just breathe that junk all your life. I did for four years. Our high school backed up against Neches Butane, the synthetic butadiene plant. All our baseball, football, band, summer baseball all practiced with that stuff, we may as well have been swimming in it.

BC: Geez.

JP: There was a report about ten years ago in the Houston Chronicle that studied my high school and called it Leukemia High because leukemia for young people was just off the scale. There was a reason, we all knew what it was. Poor people like my dad, I've always said this, I don't know if it's true or not. He's been dead a long time. I think my dad would probably would have taken that bargain and said "Okay it's going to cause cancer." He died of cancer. It might not have been from the plant, we'll never know. But he would have made that deal coming from a really poor... "Fine. I'll at least have 25 years where I'm working. Get my family ahead. Who knows? You get killed when a tractor flips over you next year if you are on a farm." I think a lot of the people going from dirt farmers to something else felt the same way. It took the government a long time and part of it because Texas just wasn't interested in doing that kind of, the state government it just wasn't an environmental laborer. It just wouldn't. The unions could elect some people in Port Arthur on the ship channel but not many others in Texas.

BC: The Houston Ship Channel and oil refining industry obviously they work together.

JP: Yeah sure.

BC: Could one have gotten, like could they be as big as they are now if they didn't help each other out?

JP: No, I don't think so. The big help is the refining revolution going on in the southwestern U.S. leading the world in World War I forward. It's the realization that war is essential, that war and petrochemicals is going to be essential to winning wars. There is a realization that the automobile industry, the gasoline powered automobile's occurring. Right when every big oil company is going to grow, was looking to build new refineries, the Houston Ship Channel opened it was just perfect. It was cheap land, it was a lot of natural gas, there was fresh water. Everything you needed for a refinery and you were in the administrative production capital of southwestern oil in Houston. The Ship Channel just like answered prayer for the oil industry in the 1920s they were all looking for a location to build their major refineries somewhere where all this southwestern oil can come by pipeline. It was somewhere between New Orleans and Corpus Christi, it was all along that place and the Ship Channel is the center of it. All the dredging, all the plants the biggest product since the twenties has been cotton before and oil since. They were born and raised together. I always make the point about Houston in general is, it's a luck of timing. The modern oil industry the way I count it is born at Spindletop. 1901. Beaumont, our region. Oil in Rockefeller's age is 40 years of making kerosene for illumination in the northeast. The modern industry is vastly bigger, it's energy it's automobile, it's gasoline. Really a whole bigger giant industry grows after Spindletop and our region and Houston is a big beneficiary and those refineries are the big symbol. It's a pretty amazing story. Email me and I'll send you the

last version I can find of the article or when the book comes out in a week or two I'll give you one.

BC: Thank you.

JP: It puts refining in that whole big chunk of industry that still dominates our city.

BC: When the Keystone XL pipeline finally gets the go ahead from somebody eventually, what kind of impact do you think it will have on Houston?

JP: I don't think it will have much. I think it is greatly exaggerated because the pipelines, like the refineries don't employ very many people. Some of the refineries in Port Arthur have built home construction jobs but I think 300 permanent jobs in what's the biggest refinery now in the country, the Motiva plant in Port Arthur that anticipates 300 out of what used to be 5,000 jobs so it's something. Air pollution in Port Arthur will get a little worse, it's already been bad forever. It's not good to get a little worse. I think it's been the whole debate has been somewhat exaggerated because both sides underneath "Should we build a pipeline?" is a question "Should we develop oil sands?" It's a whole different magnitude of importance that the oil sands which pointed toward, they are projecting five million barrels of able oil sands produced in Alberta and Canada and made into sand crude with a lot of heat and water and then shipped into the pipeline to be refined a second time. They are predicting five million barrels a day going somewhere right in twenty years. That's a lot of oil sand. I think what we'd see is the export of a lot of that. If that passes through and goes somewhere else its part of a global economy which is probably good for the global economy which indirectly is good for us. I think the pipeline itself has been exaggerated. Although it's a seven billion dollar project. A lot of people, a lot of money passing through different hands to build it which is one, certainly in the early Obama administration when we started debating it we certainly were looking for shovel ready jobs and that certainly

was one of them. The construction jobs are a lot more important than the permanent jobs. A lot more of them. Something as kind of a boost and you get it built and there's just compressor stations of people patrolling and fixing the pipeline when something happens to it. Pollution is probably exaggerated, too. I think the big question always with environmentalists is "What can we use to try to bring attention to the impact of oil sands development? Not necessarily the pipeline." The Canadian government said, "Okay we don't care if we go to the U.S. if we don't we'll go to China." They will use it in dirtier ways and it will be worth refining. It's hard to know. I think it will be built. I'm surprised it has been this long. One thing happening is some of the pipeline is not crossing the Canadian border is already being built now. So from Cushing to here has been opened. We'll see. It is very interesting though. It is incredibly interesting I went to the State Department hearing about whether it was in the public interest to allow it to be built because it crossed the Canadian/U.S. border and the law specified that it had to have Executive Department approval. It was four hours of people getting up and… actually 5:00 to 10:00 at night. People getting up and talking for 3 minutes about "Yes" or "No" and sitting down no comment, no nothing. I listened about three hours and then went on and watched a basketball game. What the heck? Alright anything I can do to finish up and help you?

BC: Just one more question, sir. Is there anything that can be done to improve Houston's standing on the world stage when it comes to oil?

JP: I don't think so, I think we are there. I think the biggest thing we have been toying with, doing over the last mid… 20 years now mid 1990's is trying to understand how we could also make a reputation as a greener city because our reputation has been the oil capital of the world and the oil pollution capital of the world which is not… something you would rather not brag about. A lot of it is a local and state government enforcing laws and a lot of it is companies

realizing that if they don't do it somebody is going to make them. I think we are getting close to that. It depends on who is President and who appoints the EPA administrators and who is Governor of Texas. Those are all places that influence what we enforce and how seriously we enforce it. I think the research and development function is here, again the shell oil and gas is coming here. The L & G liquid faction is coming here. Here being upper Texas and the Louisiana Gulf coast, it's pretty amazing. Universities are getting better that's going to be a good thing. Could be good for U of H. We need to be as good as the region deserves and we are getting there gradually. Alright, let me help you. I've got stuff that will help you. I don't see it here. I wrote a book for my dissertation that became my first book it's called, "The Growth to Refining Region" It's about our region the library has a copy. I would lend you one but I don't have one here. It's an old ugly book but it's pretty good it does a lot of things systematically. There are other books that aren't about things we've talked about. I'll be glad to help you find sources and things. I'll be glad to look it over when you write it and see if I can help you.

BC: Thank you sir. Thank you for your time too.

JP: Sure. I like to talk about this. I realize I'm weaker than I thought after my operation. I lecture for an hour and a half and I'm wiped out.

End of interview.