

# **Rockefeller University records, Reports of Students**

This finding aid was produced using ArchivesSpace on October 31, 2019.

Rockefeller Archive Center

15 Dayton Avenue Sleepy Hollow 10591

archive@rockarch.org

URL: http://www.rockarch.org

# **Table of Contents**

Summary Information	3
Scope and Contents	3
Arrangement	3
File Plan note	2
Administrative Information	4
Controlled Access Headings	4
Collection Inventory	5
Reports of students - General Biochemistry	5

# **Summary Information**

**Repository:** Rockefeller Archive Center

**Creator:** Rockefeller University

**Creator:** Rockefeller Institute for Medical Research

**Title:** Rockefeller University records, Reports of Students

**ID:** FA904

**Date [inclusive]:** 1959-1972

**Physical Description:** 1.52 Cubic Feet 4 letter document boxes.

**Physical Description:** 4 boxes

**Language of the** English

**Material:** 

#### **Preferred Citation note**

Information regarding the Rockefeller Archive Center's preferred elements and forms of citation can be found at <a href="http://www.rockarch.org/research/citations.php">http://www.rockarch.org/research/citations.php</a>

# **Scope and Contents**

Reports of students on work done for laboratory course in biochemistry.

^ Return to Table of Contents

## Arrangement

Arranged by each year. Each volume indexed.

<sup>^</sup> Return to Table of Contents

#### ^ Return to Table of Contents

#### File Plan note

Former Classification: I 470-1

^ Return to Table of Contents

## **Administrative Information**

#### **Publication Statement**

Rockefeller Archive Center

15 Dayton Avenue Sleepy Hollow 10591 archive@rockarch.org

URL: http://www.rockarch.org

### **Conditions Governing Access note**

This collection is open for research. Brittle or damaged items are available at the discretion of RAC.

^ Return to Table of Contents

# **Controlled Access Headings**

- Arboviruses
- Cell and biomolecular sciences
- Science -- Study and teaching
- Medical education
- Medicine, Preventive
- Medical technology
- Chemistry
- Biochemistry
- Biology -- Research

- Life sciences
- Animal behavior
- Medical research
- Medical sciences

# **Collection Inventory**

Title/Description	Instances
1959-1962	box 1
Summer 1959	box 1
1 Alan R. Adolph NUCLEAR MAGNETIC RESONANCE	
2 Thomas Peter Bennett THE OPTICAL SPECIFICITY OF AN AMINO ACID DEPENDENT EXCHANGE BETWEEN 32P LABELED INORGANIC PYROPHOSPHATE AND ATP IN BACILLUS BREVIS EXTRACTS	
3 Barry R. Bloom ON THE INTRACELLULAR LOCALIZATION OF AN S <sup>3</sup> #-COUPLED AZOPROTEIN ANTIGEN IN RABBIT SPLEEN	
4 Arthur H. Burr, Jr. AN AUTORADIOGRAPHIC STUDY ON THE UPTAKE OF S³# SULFATE BY NERVOUS TISSUE ON THE RAT	
5 Stephen Cooper ACTION OF DIOXANE ON CARBOXYPEPTIDASE	
6 Marc Estrin FURTHER EXPERIMENTS ON THE PRODUCTION OF AMINO ACIDS UNDER POSSIBLE PRIMITIVE EARTH CONDITIONS	
7 Peter John Gomatos LEVELS OF OXIDIZED AND REDUCED DIPHOS-PHOPYRIDINE NUCLEOTIDE AND TRIPHOSPHOPYRIDINE NUCLEOTIDE IN HELA CELLS INFECTED IN TISSUE CULTURE WITH NEWCASTLE DISEASE VIRUS	
8 Guido Guidotti STUDIES ON THE C-TERMINAL AMINO ACID OF HEMOGLOBIN	
9 John J. Hutton STUDIES ON COLICINE K - THE PHYSIOLOGY OF E. COLI K###	
10 Bruce S. McEwen TRANSFER OF PALMITATE FROM SERUM ALBUMIN TO RAT LIVER FRACTIONS	
Summer 1960	box 1

1 Harry S. Alwine, Jr. A QUANTITATIVE STUDY OF DNA CONCENTRATION IN NUCLEI OF THE LIVER AND SPLEEN OF LABORATORY RATS	
2 Stephen Atherton IN VITRO STUDIES OF TOXIC FACTOR FROM LYMPH NODE CELLS OF BURNED RATS	
3 John E. Bellis SERUM PROTEINS OF THE DOMESTIC PIGEON	
4 Richard C. Blinkoff HEXOSAMINE AND GLUCURONIC ACID ANALYSIS IN VARIOUS BRAIN TISSUES	
5 Merrill burr CHROMATOGRAPHIC SEPARATION OF COMMERCIAL GUANOSINE-51-TRIPHOSPHATE ON A DOWEX 1 x 10 COLUMN WITH 0.8 M to 1.6 M AMMONIUM FORMATE, pH 5, AND SUBSEQUENT TESTS	
6 Paul T. Englund THE CRYSTALLIZATION AND CHROMATOGRAPHY OF YEAST PYROPHOSPHATASE	
7 Joe Gally A STUDY OF THE PRODUCTS OF THE REACTION OF DIPHENYLAMINE WITH DEOXYRIBOSE, DEOXYBONUCLEIC ACID, AND FURFURYL ALCOHOL	
8 Lorna Green DETERMINATION OF THE PYRIDINE NUCLEOTIDES IN ANIMAL TISSUE BY FLUORIMETRIC METHODS	
9 John Hershey INULIN BIOSYNTHESIS - THE PURIFICATION OF FRUCTOKINASE	
10 Bernard F. Mach FLUORIMETRIC DETERMINATION OF PYRIDINE NUCLEOTIDES	
Summer 1961	box 1
1 Robert B. Barlow Jr. INFRARED ANALYSIS OF KERATOSULFATE	
2 William E. Bowers STUDIES ON THE TRYPSIN DIGESTION OF OVALBUMIN DENATURED BY HEAT AND UREA	
3 Galeb E. Finch STUDIES ON THE  3, D-GALACTOSIDASE INDUCIBLE STRAIN OF ESCHERICHIA COLI, K-12	
4 J.D. Foch, Jr. PURIFICATION OF #-GALACTOSIDASE FROM E. COLI BY STARCH GEL ELECTROPHORESIS	
5 Alexander Kessler AN ALBUMIN - FATTY ACID COMPLEX: HYDROLYSIS BY PEPSIN AND TRYPSIN	
6 Steven W. Matthysse ENTHALPY OF ACTIVATION OF GLYCERALDEHYDE - 3 -PHOSPHATE DEHYDROGENASE	

7 Lewis K. Nading THE EFFECT OF MARGIAL LEVELS OF BIOTIN AND AMMONIUM ON THE L-AMINO ACID OXIDASE AND THE FREE AMINO ACID POOL OF NEUROSPORA CRASSA 8 Norman Robbins AN ATTEMPT TO DETECT THE SYNTHESIS OF 3,4 DIHYDROXYPHENYLETHYLAMINE (DOPAMINE) IN MAMMALIAN SKIN 9 Leonard A. Sauer MITOCHONDRIAL MALIC DEHYDROGENASE INHIBITION BY ADENOSINE DIPHOSPHORIBOSE 10 Philip M. Seeman SALIVA PEROXIDASE 11 Gudrun D. Staub STARCH GEL ELECTROPHORESIS OF RAT AND FROG SERA 12 Lawrence S. Sturman Ca## TRANSPORT BY THE INTESTINE OF THE RAT Summer 1962 box 1 1 Anthony Cerami N-TERMINAL AMINO ACID DETERMINATION OF PP-L, A PROTEINPOLYSACCHARIDE COMPLEX 2 Brian Clark CHARACTERIZATION OF E. COLI S-RNA ISOLATED BY USE OF STREPTOMYCIN SULFATE 3 Rosemary Faulkner AMINO ACID INCORPORATION BY MICROSOMES AND RIBOSOMES ISOLATED FROM **RAT LIVER** 4 Scott M. Grundy STUDIES ON ELECTROPHORETIC LIPORPROTEIN PATTERNS IN VARIOUS SPECIES 5 Alan M. Kapuler THE REGULATION OF ARGININE METABOLISM BY COORDINATE INDUCTION AND REPRESSION 6 Harvey Franklin Lodish AN INVESTIGATION OF THE KINETICS AND MECHANISM OF ENZYME CATALYZED MUTAROTATION 7 John Marchalonis A STUDY OF IN VITRO Ca## ABSORPTION AND RELEASE BY INTACT TISSUE AND SEROSAL SHEETS FORMED FROM RAT INTESTINE 8 Frances Messik STUDIES ON THE ATP AND UTP CONTENT OF COSTAL CARTILAGE 9 Dan Rifkin THE COMPOSITION OF CHIMPANZEE **HEMOGLOBIN** 10 Alan B. Steinbach PRELIMINARY INVESTIGATIONS INTO THE CHEMICAL STRUCTURE OF

RAT HEMOGLOBIN BY ABSORBTION

SPECTROPHOTOMETRY

1963-1964	box 2
Summer 1963	box 2
1 Helen H. Arnold DIGESTION OF PROTEINPOLYSACCHARIDE WITH A PROTEOLYTIC ENZYME ISOLATED FROM COSTAL CARTILAGE	
2 A.H. Cass, Jr. WATER PERMEABILITY OF THIS LIPID MEMBRANES	
3 Wm. Einer Gall KINETIC STUDIES ON AN ENZYME FROM CARTILAGE USING A VISCOMETRIC ASSAY	
4 Vincent Hascall ENZYMATIC HYDROLYSIS OF ATP AND ITP BY RABBIT MUSCLE MYOSIN IN THE PRESENCE OF THE PURINE DERIVATIVES ADENINE, HYPOXANTHINE AND 6-MERCAPTO PURINE	
5 Bertil Hille CATION ACTIVATION OF AN ERYTHROCYTHE GHOST ATPASE	
6 David I. Hirsh EFFECTS OF SALMINE AND ACTINOMYCIN D ON THE THERMAL DENATURATION OF DEOXYRIBONUCLEIC ACID	
7 C. Donald Knight EXPERIMENTS WITH PROCEDURES FOR PURIFICATION OF ENOLASE ENZYME FROM BAKERS' YEAST AND ITS ACTIVATION IN THE PRESENCE OF METAL IONS	
8 John K. Marshall APPLICATION OF THE SOMOGYINELSON METHOD TO PP-L AND ITS DERIVATIVES	
9 Sanford R. Simon SOME PROPERTIES OF IGUANA HEMOGLOBIN	
10 Lee Van Lenten FRACTIONATION OF DEGRADED PROTEINPOLYSACCHARIDE FROM CARTILAGE BY COUNTERCURRENT DISTRIBUTION METHODS	
11 Charles Wahl THE INDUCTION OF THREONINE DEHYDRASE IN RAT LIVER	
12 Eric Weinberg STUDIES ON THE ENZYME, NITRATE REDUCTASE	
13 Robley C. Williams Jr. A STUDY OF THE LIPIDS OF SPINACH CHLOROPLASTS BY THIN-LAYER CHROMATOGRAPHY	
Spring 1964	box 2

1 Nicholas H. Acheson THE TIME OF INHIBITION OF POLIO VIRUS RNA SYNTHESIS BY GUANIDINE

2 Barbara Sue Andrews STUDIES OF A THIN- LAYER CHROMATOGRAPHIC METHOD FOR THE SEPARATION OF THE SEX PEPTIDE OF ADULT MALE DROSOPHILA MELANOGASTER	
3 Richard W. Compans A STUDY OF THE MECHANISM OF ACTION OF VIRUS SPECIFIC INHIBITORS	
4 S. Cushman ATTEMPTED ISOLATION OF CHLOROPLASTS OR CHLOROPLAST FRAGMENTS FROM THE RED ALGA, PORPHYRIDIUM CRUENTUM	
5 Lyndell Larsen DETERMINATION OF FATTY ACIDS IN CARTILAGE BY GAS-LIQUID CHROMATOGRAPHY	
6 Kenneth D. Nadler ATTEMPTED STUDIES WITH A PSEUDOMONAS CYTOCHROME C.	
Summer 1964	box 2
1 Robert S. Anthony MITOCHONDRIA, OXIDATIVE PHOSPHORYLATION, AND THE SUBMITOCHONDRIAL PARTICLES	
2 Barry Bean A BIOLOGICAL NOTION OF BACTERIOPHAGE P22	
3 Jack Bradbury THE PHOTORECEPTOR PIGMENTS IN THE VISCERAL GANGLION OF APLYSIA	
4 Michael Chanowitz STUDY OF AN INFECTIOUS HEMOLYTIC ANEMIA OF RATS	
5 WILLIAM L.R. CRUCE PHOSPHATE MERABOLISM AND THE SODIUM PUMP IN WHOLE NERVE FROM LIMULUS	
6 Thomas Easton PRELIMINARY STUDY OF THE OCCURRENCE OF MALTOSE-CLEAVING ENZYMES IN ESCHERICHIA COLI AND SALMONELLA SPECIES	
7 Bill Ensminger UBIQUINONE INTERACTION WITH INORGANIC PHOSPHATE	
8 Dave Herron THE REACTION OF MITOMYCIN C WITH SALMON SPERM DNA	
9 John G. Hildebrand STUDIES ON THE LIPIDS OF LACTOBACILLUS PLANTARUM	
10 Lewis J. Kleinsmith ISOLATION AND PURIFICATION OF RIBONUCLEIC ACID POLYMERASE AND DEOXYRIBONUCLEIC ACID POLYMERASE FROM ESCHERICHIA COLI	
11 Gretchen Knecht AN ATTEMPT TO LOCALIZE GLUTATHIONE WITHIN THE MITOTIC CELL	
12 Fred Russell Kramer AN ATTEMPT TO CONDITION THE LUMINESCENT RESPONSE OF GONYAULAX	

13 Andrea Leskes A STUDY OF THE ACTINOMYCIN D - DNA COMPLEX	
14 Herbert E. Longenecker, Jr. THE SYNTHESIS AND PRELIMINARY PHARMACOLOGICAL INVESTIGATION OF A SERIES OF BIS-QUATERNARY AMMONIUM SALTS	
15 Arnold Marglin THE EFFECTS OF IMIPRAMINE ON D-AMINO ACID OXIDASE	
16 Ronald Millecchia THE EFFECTS OF METHYLENE BLUE ON THE ELECTRICAL PROPERTIES OF SINGLE BIMOLECULAR LIPID MEMBRANES	
17 Barry W. Peterson THE EFFECT OF HEAVY METAL IONS UPON PPLO EXTRACT ESTERASE ACTIVITY	
18 D. Max Snodderly, Jr. EXTRACTION OF VISUAL PIGMENTS	
19 Mary R. Rifkin SEPARATION OF TRYPTIC PEPTIDES OF SEC HEMOGLOBIN	
20 Martin Spencer THE EFFECT OF TRIIODOTHYROACETIC ACID IN VITRO ON LIPOLYSIS IN ADIPOSE TISSUE	
21 Phyllis Susan Romanoff PROTEIN SYNTHESIS IN THE RAT UTERUS: THE EFFECT OF ESTRADIOL-17 # ON RIBOSOMAL MATERIAL	
22 Edward F. Rossomando ISOLATION OF CRYSTALLINE PYROPHOSPHATASE: THE EFFECT OF STORAGE OF YEAST ON ACTIVITY	
1965-1968	box 3
Summer 1965	box 3
1 Nora C. DeBrunner ISOLATION AND CHARACTERIZATION OF HISTONES FROM CALF THYMUS	
2 William R. Colquhoun SOME METHODS FOR CHEMICAL ANALYSIS OF BIOLOGICAL MEMBRANES	
3 David Forman A STUDY OF A SUBSTANCE FROM BRAIN TISSUE WHICH STIMULATES SMOOTH MUSCLE	
4 Stanley Fowler DETERMINATION OF THE AVERAGE MOLECULAR WEIGHTS OF CHONDROITIN SULFATE A AND CHONDROITIN SULFATE C.	
5 Anne S. Gift STUDIES ON THE PURIFICATION AND RENATURATION OF TAKA-AMYLASE	
6 Paul David Gottlieb A PARTIAL PURIFICATION OF MILK LIPASE	

NERVE	
8 Carl Lundeen STUDIES ON THE DARK UPTAKE OF CARBON DIOXIDE BY ACETATE-ADAPTED CELLS OF CHLAMYDOMONAS REINHARDTII	
9 J.L. Mosser ON THE APPLICATION OF DISC ELECTROPHORESIS TO THE ISOLATION OF A FACTOR RESPONSIBLE FOR TRANSFORMABILITY IN DIPLOGOCCUS PNEUMONIAE	
10 Robert Shapley UPTAKE AND ESTERIFICATION OF FATTY ACIDS BY RAT ADIPOSE TISSUE: THE EFFECT OF PALMITATE AND ALBUMIN ON IN VITRO INCUBATIONS	
Summer 1966	box 3
1 Andrew E. Balber RECENT EXCITEMENT AND LACK OF PROGRESS IN THE SEARCH FOR TRANSFER RNA- BOUND METHIONINE IN LYTECHINUS PICTUS EGG EXTRACTS	
2 Samuel Balk DETERMINATION OF THE NATURE AND LOCATION OF MYXOVIRUS NEURAMINIDASE - REVIEW OF THE LITERATURE ON NEURAMINIDASES AND ASSAY OF NEURAMINIDASE SUBSTRATE FOR PURITY	
3 Byron Burlingham EFFECT OF FETAL AND ADULT SERUM FRACTIONS ON PRIMARY CULTURES	
4 Bruce A. Diner IDENTIFICATION OF A FUNGUS PIGMENT	
5 Donald A. Elliott THYMIDINE INCORPORATION INTO DNA IN GROWING RATS WITH ALTERED NUTRITION	
6 N. Fedoroff HISTONE ACETYLATION IN ISOLATED RAT LIVER NUCLEI	
7 Craig Fields RNA DETERMINATION IN LIVING CELLS BY INTERFERENCE MICROSCOPY	
8 Sally C. Householder ISOLATION AND ANALYSIS OF GANGLIOSIDES FROM A BOVINE BRAIN	
9 L. Martin Jerry THE ISOLATION OF VASOPRESSIN FROM BOVINE NEUROHYPOPHYSEAL EXTRACT	
10 Henry A. Lester THE ISOENZYME COMPONENTS OF HORSERADISH PEROXIDASE	
Summer 1967	box 3
1 Richard S. Bockman THE USE OF A FLUORESCENT	

1 Richard S. Bockman THE USE OF A FLUORESCENT PROBE TO STUDY THE CHANGE IN CONFORMATIONAL STATE OF BOVINE IgG

2 David E. Briles THREE EXTRACTION TECHNIQUES YIELDING CRUDE MEMBRANE-ANTIGEN EXTRACTS OF TEN BLOOD GROUP ANTIGENS IN CHICKENS	
3 Carl D. Hopkins CHEMICAL, RATHER THAN BIOLOGICAL, ASSAYS FOR ACETYLCHOLINE IN BRAIN TISSUE	
4 A. Ross Kiester SOME CHEMICAL AND BIOLOGICAL PROPERTIES OF THE EGG-NEST FOAM OF THE FOAM-BUILIDING FROG, ENGYSTOMOPS PUSTULOSUS	
5 Edward E. Max A METHOD FOR DETERMINING THE ABSOLUTE STEREOCHEMISTRY OF GLUTAMATE DECARBOXYLASE	
6 Cynthia Reed Nist AN ATTEMPT TO PURIFY THE MUTAROTATING ENZYME: 5.1.3.3 ALDOSE 1-EPIMERASE	
1969-1972	box 4
1969	box 4
1 Carl F. Beyer, Jr. INTERACTION OF THE FLUORESCENT DYE 2-p- TOLUIDINONAPHTHALENE-6-SULFONATE WITH TYROCIDINE A.	
2 Cheng Chen FORMATION OF BILE PIGMENT FROM HEMOGLOBIN BY MACROPHAGES	
3 Michael W. Draper CHOLINE ACETYLASE LEVELS IN SELECTED AREAS OF RAT BRAIN	
4 Owen R. Floody THE EFFECTS OF SEX STEROIDS ON BRAIN CATECHOLAMINE AND PROTEIN SYNTHESIS IN OVARIECTOMIZED RATS	
5 Beverly Greenspan UPTAKE OF SULFATE, LEUCINE, AND THYMIDINE BY BOVINE NASAL CARTILAGE SLICES MAINTAINED IN VITRO	
6 Gary R. Gunther THE TEMPERATURE AND CONFORMATIONAL DEPENDENCE OF THE MAGNETIC SUSCEPTIBILITY OF HEMERYTHRIN	
7 Janet MacIver PROGRESS REPORT ON THE EFFECTS OF SUBLETHAL DOSES OF DDT ON HENS AND THEIR EGGS	
8 Jeffrey R. Powell ISOELECTRIC FOCUSING OF LYSOSOMAL PROTEINS	
9 James B. Rand INVESTIGATION OF THE LIPIDS OF NEUROSPORA CRASSA MUTANTS	
10 Allen L. Thunberg ISOLATION OF TWO DISTINCT IMMUNOGLOBULINS OF RESTRICTED	

HETEROGENEITY FROM A RABBIT ANTISERUM

1970	box 4
1 Wesley L. Cosand FRACTIONATION STUDIES ON PROTEIN-POLYSACCHARIDES	
2 Peter D'Eustachio RED PIGMENT OF AN ADENINE- DEFICIENT SACCHAROMYCES MUTANT	
3 Darcy B. Kelley UPTAKE AND BINDING OF LABELLED CORTICOSTERONE AND HYDROCORTISONE IN HAMSTER BRAINS	
4 Anthony S. Meyer STUDIES ON THE CARBAMYLATION OF PROTEINS BY UREA	
5 Abraham Snyder TOWARDS THE SYNTHESIS AND NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY OF POLY-#-METHYL ASPARTATE	
1971 September 30	box 4
<b>Scope and Contents note</b>	
Project reports.	
2:00 Announcements	
2:15 G. Barany SYNTHESIS OF ATP-BINDING PEPTIDE	
2:35 D. Cheng SOME STUDIES ON HELA CELL CYTOPLASMIC MEMBRANES	
2:55 J. Coyne QUANTITATION OF XANTHINE DEHYDROGENASE ALLOZYMES IN MASS SAMPLES OF DROSOPHILA PSEUDOOBSCURA	
3:15 V. Enea GLUCAGON-INDUCED SYNTHESIS OF NUCLEAR ACIDIC PROTEINS	
3:35 G. Hoffman 5'-NUCLEOTIDASE ACTIVITY OF LYMPHOCYTES	
3:55 L. Possani BINDING STUDIES OF CHOLINERGIC SUBSTANCES TO ACETYLCHOLINE RECEPTOR	
4:15 L. Rubin PRELIMINARY STUDY OF SEROTONIN BINDING IN SPECIFIC AREAS OF THE RAT BRAIN	
4:35 J. Tauber STUDIES ON THE PROTEOGLYCAN OF RABBIT CORNEA	
1972	box 4
<b>Scope and Contents note</b>	
Project reports.	
J.S. Geronimo THE MAKING OF PEPTIDES	

HYDROXYTRYPAMINE CONCENTRATIONS IN THE

# FORE-PLUS MIDBRAIN REGION OF THE NEONATAL **RAT** C.C. Halpern SOME SUBCELLULAR-EFFECTS OF **PHALLOIDIN** V. Iwanij NONIDENTICAL SUBUNITS OF RIBULOSE DIPHOSPHATE CARBOXYLASE FROM CHLAMYDOMONAS REINHARDI N.E. Kagan TEMPERATURE INDUCED VARIATIONS IN THE CONCENTRATIONS OF ACIDIC NUCLEAR PROTEINS OF DUCK ERYTHROCYTES R.M. y Lopez THE MIGRATION OF MEMBRANE PHOSPHOLIPIDS IN RELATION TO SDS-POLYACRYLAMIDE GEL ELECTROPHORESIS OF MEMBRANE PROTEINS E. Mahoney ATPASE AND 5'-NUCLEOTIDASE ACTIVITIES IN MOUSE PERITONEAL MACROPHAGES S. Mojsov MODIFICATION OF THE IMIDAZOL RING OF HISTIDINE IN ANGIOTENSIN II R. Piccioni KINETIC CHARACTERIZATION OF INSOLUBLEIZED HEXOKINASE S. Rapoport SEXUAL DIFFERENCES IN BRAIN SEROTONIN AND PITUITARY-ADRENAL FUNCTION J.-D. Vassalli THYMIDINE KINASE ACTIVITY IN STIMULATED HUMAN LYMPHOCYTES F.F. Wong THE INFLUENCE OF SOME CATIONS ON AN ADENOSINE TRIPHOSPHATASE FROM THE HUMAN

**ERYTHROCYTE** 

<sup>^</sup> Return to Table of Contents